ISSN 0034-5687

RESPIRATION PHYSIOLOGY

CUMULATIVE AUTHOR AND SUBJECT INDEX

VOLUMES 51–75

ELSEVIER

RESPIRATION PHYSIOLOGY

Editor:

Peter SCHEID, Bochum

Honorary Editor:

Pierre DEJOURS, Strasbourg

Editorial Board:

N.R. ANTHONISEN, Winnipeg
A. AR, Tel-Aviv
H.J.H. COLEBATCH, Sydney
H.M. COLERIDGE, San Francisco, CA
M. DECRAMER, Leuven
J.A. DEMPSEY, Madison, WI
M. DENAVIT-SAUBIÉ, Paris
F.L. ELDRIDGE, Chapel Hill, NC
M.R. FEDDE, Manhattan, KS
S.C. GANDEVIA, Sydney
B.J.B. GRANT, Buffalo, NY
H. HOPPELER, Bern
D.C. JACKSON, Providence, RI
W.K. MILSOM, Vancouver
P.C.G. NYE, Oxford
J. PIIPER, Göttingen
F.L. POWELL, La Jolla, CA
J.-L. RODEAU, Strasbourg
J.A. RUSSELL, Buffalo, NY
G. SANT'AMBROGIO, Galveston, TX
R.C. SCHROTER, London
A. TOULMOND, Paris
J.-P. TRUCHOT, Arcachon
P.D. WAGNER, La Jolla, CA
D.V. WALTERS, London

RESPIRATION PHYSIOLOGY

AUTHOR and SUBJECT INDEX

VOLUMES 51 — 75

ELSEVIER SCIENCE PUBLISHERS B.V.
AMSTERDAM – LONDON – NEW YORK – TOKYO

© 1992 Elsevier Science Publishers B.V.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of the publisher, Elsevier Science Publishers B.V., Copyrights & Permissions Departments, P.O. Box 521, 1000 AM Amsterdam, The Netherlands.

This journal is printed on acid-free paper.

No responsibility is assumed by the publisher for any injury and/or damage to persons or property as a matter of products liability, negligence or otherwise, or from any use or operation of any methods, products, instructions or ideas contained in the material herein. Because of the rapid advances in the medical sciences, the publisher recommends that independent verification of diagnoses and drug dosages should be made.

Although all advertising material is expected to conform to ethical (medical) standards, inclusion in this publication does not constitute a guarantee or endorsement of the quality or value of such product or of the claims made of it by its manufacturer.

Submission of manuscripts: To Dr. Peter Scheid, Ruhr-Universität Bochum, Institut für Physiologie, Universitätsstrasse 150, D-4630 Bochum, F.R.G. Phone: -49-(0)234-700.4852 FAX: -49-(0)234-709.4191

Special regulations for authors. Upon acceptance of an article by the journal, the author(s) will be asked to transfer copyright of the article to the publisher. This transfer will ensure the widest possible dissemination of information.

Special regulations for readers in the U.S.A. This journal has been registered with the Copyright Clearance Center, Inc. Consent is given for copying of articles for personal or internal use, or for the personal use of specific clients. This consent is given on the condition that the copier pays through the Center the per-copy fee stated in the code on the first page of each article for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. The appropriate fee should be forwarded with a copy of the first page of the article to the Copyright Clearance Center, Inc., 27 Congress Street, Salem, MA 01970, U.S.A. If no code appears in an article the author has not given broad consent to copy and permission to copy must be obtained directly from the author. All articles published prior to 1980 may be copied for a per-copy fee of US$2.25, also payable through the Center. This consent does not extend to other kinds of copying such as for general distribution, resale, advertising and promotion purposes, or for creating new collective works. Special written permission must be obtained from the publisher for such copying.

Printed in Belgium

INTRODUCTION

This index covers volumes 51 (1983) to 75 (1989) of *Respiration Physiology*. The subject index was prepared by Dr. Sarah Dejours, while the author index was compiled by the publishers.

In the 7 years covered by this index a special issue was published on "Adaptive variation in the mammalian respiratory system in relation to energetic demand" with P.E. di Prampero as guest editor (Vol. 69, No. 1, July 1987).

The names of all regular members of the Editorial Board (1983—1989) and of the guest referees during this period are listed. Both the editor and the honorary editor of *Respiration Physiology* wish to express their gratitude to all of them, as well as to the contributors of papers.

Appended is a list of units, symbols, and abbreviations summarizing the generally accepted rules that are used in this journal.

PETER SCHEID

MEMBERS OF THE EDITORIAL BOARD

RESPIRATION PHYSIOLOGY

1983—1989

C. Albers, Regensburg, Germany
N.R. Anthonisen, Winnipeg, Canada
A. Ar, Tel-Aviv, Israel
J. Bissonette, Portland, OR, U.S.A.
P. Bouverot, Strasbourg, France
C. Bridges, Düsseldorf, Germany
P. Burri, Bern, Switzerland
M. Cohen, New York, NY, U.S.A.
H.J.H. Colebatch, Sydney, Australia
H. Coleridge, San Francisco, CA, U.S.A.
J.A. Daubenspeck, Hanover, NH, U.S.A.
M. Denavit-Saubié, Paris, France
P.E. Di Prampero, Udine, Italy
F.L. Eldridge, Chapel Hill, NC, U.S.A.
L.A. Engel, Sydney, Australia
M.R. Fedde, Manhattan, KS, U.S.A.
S. Gandevia, Sydney, Australia
B.J.B. Grant, Buffalo, NY, U.S.A.
A. Grassino, Montreal, Canada
G. Gros, Essen, Germany
N. Heisler, Göttingen, Germany
H. Hoppeler, Bern, Switzerland
J.M.B. Hughes, London, U.K.
D.C. Jackson, Providence, RI, U.S.A.
W. Jelkmann, Lübeck, Germany
P. Kirkwood, London, U.K.
G. Lykkeboe, Aarhus, Denmark
D.I. McCloskey, Sydney, Australia
W.K. Milsom, Vancouver, Canada
V. Molony, Edinburgh, U.K.
P.C.G. Nye, Oxford, U.K.
J. Piiper, Göttingen, Germany
J.-L. Rodeau, Strasbourg, France
J.A. Russell, Buffalo, NY, U.S.A.
G. Sant'Ambrogio, Galveston, TX, U.S.A.
P. Scheid, Bochum, Germany
R.C. Schroter, London, U.K.
L.B. Strang, London, U.K.
A. Toulmond, Paris, France
J.-P. Truchot, Arcachon, France
P.D. Wagner, La Jolla, CA, U.S.A.
D.V. Walters, London, U.K.

GUEST REFEREES

RESPIRATION PHYSIOLOGY

1983—1989

R.A. Ackerman (Ames, IA, U.S.A.)
J. Agnew (London, U.K.)
E. Agostoni (Milano, Italy)
C. Albers (Regensburg, Germany)
M.D. Altose (Cleveland, OH, U.S.A.)
A. Ar (Tel Aviv, Israel)
H. Bachofen (Bern, Switzerland)
C. Bainton (San Francisco, CA, U.S.A.)
R.B. Banzett (Boston, MA, U.S.A.)
J.C. Barillot (Marseille, France)
D. Bartlett, Jr. (Hanover, NH, U.S.A.)
G. Benchetrit (Grenoble, France)
N. Berend (Sydney, Australia)
A. Berkenbosch (Leiden, The Netherlands)
A.L. Bianchi (Marseille, France)
J.E. Bicudo (Bern, Switzerland)
G.E. Bisgard (Madison, WI, U.S.A.)
B. Bishop (Buffalo, NY, U.S.A.)
J. Bonaventura (Beaufort, NC, U.S.A.)
D.B. Borson (San Francisco, CA, U.S.A.)
U. Boutellier (Zürich, Switzerland)
R.G. Boutilier (Halifax, Canada)
P. Bouverot (Strasbourg, France)
A. Brancatissano (Sydney, Australia)
K.L. Brigham (Nashville, TN, U.S.A.)
J.K. Brown (San Francisco, CA, U.S.A.)
W. Burggren (Amherst, MA, U.S.A.)
P.H. Burri (Bern, Switzerland)
J.M. Canty (Buffalo, NY, U.S.A.)
P. Cerretelli (Genève, Switzerland)
H.K. Chang (Los Angeles, CA, U.S.A.)
M.W. Chapleau (Iowa, IA, U.S.A.)
N.S. Cherniack (Cleveland, OH, U.S.A.)
V. Chernick (Winnipeg, Canada)
J.S. Clark (Salt Lake City, UT, U.S.A.)
P. Cooper (Sydney, Australia)
D.J. Cotton (Saskatoon, Canada)
G. Courtice (Sydney, Australia)
E.D. Crandall (New York, NY, U.S.A.)
J.D. Crapo (Durham, NC, U.S.A.)
R.O. Crapo (Salt Lake City, UT, U.S.A.)
A.B.H. Crawford (Sydney, Australia)
L. Cruz-Orive (Bern, Switzerland)
D.G. Davies (Lubbock, TX, U.S.A.)
S.F. Dejours (Strasbourg, France)
J.A. Dempsey (Madison, WI, U.S.A.)
A. De Troyer (Bruxelles, Belgium)
P.E. Di Prampero (Udine, Italy)
B. Duron (Amiens, France)
E.B. Dussan (Philadelphia, PA, U.S.A.)
E.A. Egan (Buffalo, NY, U.S.A.)
L.A. Engel (Sydney, Australia)
L.E. Farhi (Buffalo, NY, U.S.A.)
R. Favier (Lyon, France)
M.R. Fedde (Manhattan, KS, U.S.A.)
M.E. Feder (Chicago, IL, U.S.A.)
A. Feltz (Strasbourg, France)
D. Ferrington (Sydney, Australia)
W. Fleckenstein (Lübeck, Germany)
D.G. Frazer (Morgantown, WV, U.S.A.)
D.T. Frazier (Lexington, KY, U.S.A.)
G. Gabbott (Vancouver, Canada)
S. Gaillard (Strasbourg, France)
S.C. Gandevia (Sydney, Australia)
F. Garcia-Romeu (Nice, France)
C. Gaultier (Paris, France)
P. Gehr (Bern, Switzerland)
J. Gil (New York, NY, U.S.A.)
D.L. Gilbert (Woods Hole, MA, U.S.A.)
H. Girard (Strasbourg, France)
M. Gleeson (Edinburgh, U.K.)
M. Goldstein (Sydney, Australia)
P.D. Gollnick (Pullman, WA, U.S.A.)
N.C. Gonzalez (Kansas City, KS, U.S.A.)
A.E. Grassino (Montreal, Canada)
A. Gray (La Jolla, CA, U.S.A.)
M.M. Grunstein (Philadelphia, PA, U.S.A.)
A. Guz (London, U.K.)
P. Haab (Fribourg, Switzerland)
R. Hainsworth (Leeds, U.K.)
A. Harf (Paris, France)
S. Hempleman (La Jolla, CA, U.S.A.)
D. Henderson-Smart (Sydney, Australia)
A. Heusner (Davis, CA, U.S.A.)

E. Hill (La Jolla, CA, U.S.A.)
B.A. Hills (Houston, TX, U.S.A.)
J. Hirsch (Buffalo, NY, U.S.A.)
M.P. Hlastala (Seattle, WA, U.S.A.)
A.R. Hohimer (Portland, OR, U.S.A.)
R.A.B. Holland (Sydney, Australia)
Y. Honda (Chiba, Japan)
S.K. Hong (Buffalo, NY, U.S.A.)
H. Hoppeler (Bern, Switzerland)
K. Horsfield (Midhurst, U.K.)
D. Houlihan (Aberdeen, U.K.)
R. Howard (London, U.K.)
D.W. Hudgel (Cleveland, OH, U.S.A.)
G.M. Hughes (Bristol, U.K.)
P.W. Ind (London, U.K.)
D. Isabey (Paris, France)
K. Ishii (Fukushima, Japan)
D.C. Jackson (Providence, RI, U.S.A.)
Y. Jammes (Marseille, France)
D. Jones (Vancouver, Canada)
H.A. Jones (London, U.K.)
N.L. Jones (Hamilton, Canada)
P. Jones (London, U.K.)
D. Jordan (London, U.K.)
K. Jungermann (Göttingen, Germany)
R. Kamm (Boston, MA, U.S.A.)
S.R. Kayar (Bern, Switzerland)
R. Kellogg (San Francisco, CA, U.S.A.)
S.G. Kelsen (Cleveland, OH, U.S.A.)
M. Kessler (Erlangen, Germany)
M. King (Edmonton, Canada)
M. Klain (Pittsburgh, PA, U.S.A.)
R.A. Klocke (Buffalo, NY, U.S.A.)
H. Kobayashi (Kanagawa, Japan)
J. Kohl (Zürich, Switzerland)
G.L. Kooyman (La Jolla, CA, U.S.A.)
J.A. Krasney (Buffalo, NY, U.S.A.)
G.N. La Mar (Davis, CA, U.S.A.)
P. Laurent (Strasbourg, France)
E. Lawson (Chapel Hill, NC, U.S.A.)
R.J. Ledsome (Midhurst, U.K.)
D.E. Leith (Manhattan, KS, U.S.A.)
Y. Le Maho (Strasbourg, France)
M.J. Lever (London, U.K.)
V. Leviel (Paris, France)
S.L. Lindstedt (Laramie, WY, U.S.A.)
D. Linnarson (Stockholm, Sweden)
R.A.F. Linton (London, U.K.)
B. Linzen (München, Germany)
J.M. Lundberg (Stockholm, Sweden)
G. Lykkeboe (Aarhus, Denmark)
G. Macefield (Sydney, Australia)
N: MacIntyre (Durham, NC, U.S.A.)
P.T. Macklem (Montreal, Canada)
L.A. Maginniss (Chicago, IL, U.S.A.)
A. Malan (Strasbourg, France)
H. Malte (Odense, Denmark)
J. Markl (München, Germany)
D. Marlot (Amiens, France)
J.-C. Massabuau (Strasbourg, France)
J. Massion (Marseille, France)
O.P. Mathew (Galveston, TX, U.S.A.)
O.A. Mathieu-Costello (La Jolla, CA, U.S.A.)
D.L. Maxwell (London, U.K.)
N. Mei (Marseille, France)
J. Metcalfe (Portland, OR, U.S.A.)
H. Metzger (Hannover, Germany)
M. Meyer (Göttingen, Germany)
D.E. Millhorn (Chapel Hill, NC, U.S.A.)
W.K. Milsom (Vancouver, Canada)
J. Mironneau (Bordeaux, France)
G. Miserocchi (Milano, Italy)
G. Mitchell (Madison, WI, U.S.A.)
W. Moll (Regensburg, Germany)
R. Monteau (Marseille, France)
K. Morgenroth (Bochum, Germany)
F. Morin (Buffalo, NY, U.S.A.)
R.A. Morin (Buffalo, NY, U.S.A.)
J.P. Mortola (Montreal, Canada)
I.R. Moss (Bronx, NY, U.S.A.)
R. Motais (Nice, France)
J.A. Nadel (San Francisco, CA, U.S.A.)
B.S. Nail (Sydney, Australia)
E.E. Nattie (Hanover, NH, U.S.A.)
R.W. Ogilvie (Tulsa, OK, U.S.A.)
L. Olsen (Sydney, Australia)
J.S. Olson (Houston, TX, U.S.A.)
A. Olszowka (Buffalo, NY, U.S.A.)
A. Otis (Gainesville, FL, U.S.A.)
L.C. Ou (Hanover, NH, U.S.A.)
C. Paganelli (Buffalo, NY, U.S.A.)
R. Painter (Oxford, U.K.)
M. Paiva (Bruxelles, Belgium)
T. Pedley (Cambridge, U.K.)

J.M. Péquignot (Lyon, France)
S.F. Perry (Oldenburg, Canada)
R. Peslin (Nancy, France)
E.S. Petersen (Oxford, U.K.)
E.A. Phillipson (Toronto, Canada)
J. Piiper (Göttingen, Germany)
K. Pleschka (Bad Nauheim, Germany)
J. Ponte (London, U.K.)
E. Potter (Sydney, Australia)
F.L. Powell (La Jolla, CA, U.S.A.)
C. Poyart (Paris, France)
G.K. Prisk (La Jolla, CA, U.S.A.)
D.J.C. Read (Sydney, Australia)
R.B. Reeves (Buffalo, NY, U.S.A.)
J.E. Remmers (Calgary, Canada)
D.W. Richter (Göttingen, Germany)
T. Robertson (Seattle, WA, U.S.A.)
P. Robins (Oxford, U.K.)
J.-L. Rodeau (Strasbourg, France)
D. Rurak (Vancouver, Canada)
J.A. Russell (Buffalo, NY, U.S.A.)
P.W. Scherer (Philadelphia, PA, U.S.A.)
R.C. Schroter (London, U.K.)
S. Schürch (London, Ontario, Canada)
K. Schwerzmann (Bern, Switzerland)
S.J.G. Semple (London, U.K.)
H. Shams (Bochum, Germany)
D. Sheehan (Buffalo, NY, U.S.A.)
M. Silverman (London, U.K.)
J.D. Sinclair (Auckland, New Zealand)
A.S. Slutsky (Boston, MA, U.S.A.)
J.F. Souhrada (Groton, CT, U.S.A.)
M. Souhrada (New Haven, CT, U.S.A.)
W.M. St. John (Hanover, NH, U.S.A.)
L.B. Strang (London, U.K.)
J.R. Sutton (Hamilton, Canada)
N. Takano (Kamazawa, Japan)
G.J. Tammeling (Leiden, The Netherlands)
C.R. Taylor (Boston, MA, U.S.A.)
S.M. Tenney (Hanover, NH, U.S.A.)
R.L. Terjung (Syracuse, NY, U.S.A.)
B.T. Thach (St. Louis, MO, U.S.A.)
M. Thiriet (London, U.K.)
R.W. Torrance (Oxford, U.K.)
A. Toulmond (Paris, France)
D. Triggle (Buffalo, NY, U.S.A.)
S.G. Tullett (Auchincruive, U.K.)
D.L. Turner (Bern, Switzerland)
K. van de Woestijne (Leuven, Belgium)
J. van Pelt (Amsterdam, The Netherlands)
P. Varène (Bordeaux, France)
T. Vitalis (Amherst, MA, U.S.A.)
C.M. Vleck (Tucson, AZ, U.S.A.)
T.G. Waldrop (Urbana, IL, U.S.A.)
D.V. Walters (London, U.K.)
H. Ward (Sydney, Australia)
R. Weber (Odense, Denmark)
E.R. Weibel (Bern, Switzerland)
C. Weiss (Lübeck, Germany)
H.G. Welch (Knoxville, TN, U.S.A.)
N.H. West (Saskatoon, Canada)
J. Wheatley (Sydney, Australia)
B.J. Whipp (Torrance, CA, U.S.A.)
F.N. White (La Jolla, CA, U.S.A.)
W.A. Whitelaw (Calgary, Canada)
J.G. Widdicombe (London, U.K.)
M. Wiesendanger (Fribourg, Switzerland)
W. Wieser (Innsbruck, Austria)
L. Wild (Buffalo, NY, U.S.A.)
R. Winter (London, U.K.)
S.C. Wood (Albuquerque, NM, U.S.A.)
M.K. Younes (Winnipeg, Canada)
F.W. Zechman (Lexington, KY, U.S.A.)
T. Zeltner (Bern, Switzerland)
A. Zwart (Rotterdam, The Netherlands)

UNITS, SYMBOLS AND ABBREVIATIONS

Units

The basic quantities and units of the Système International d'Unités, SI, of common use in respiratory physiology are:

length	meter	m
mass	kilogram	kg
time	second	s
thermodynamic temperature	kelvin	K
amount of substance	mole	mol

These units and their abbreviations are recommended, but not compulsory in this journal. What is more important than the strict observance of the SI rules is the avoidance of ambiguity. This is why the symbol sec for second is often used instead of the official s, which may lead to unfortunate mistakes. Volume should be expressed by m^3 or one of its decimal multiples, *e.g.* dm^3, which is equivalent to liter. The symbol l for liter is ambiguous and it is advisable to write L; however, ml for milliliter is excellent since it is unequivocal. For uptake or output of O_2 or CO_2, it is best to use the mole; if the amounts of O_2 or CO_2 are expressed in volume it should *always* be expressed under STPD conditions, *e.g.* ml STPD. For pressure, both partial and total, the official SI unit is the pascal ($= N \cdot m^{-2}$), abbreviated as Pa. One hundred kPa is about 1 atm and 10 Pa is about 1 mmH_2O. However, the common units of pressure, *viz.* Torr and atm, will certainly remain in use for quite a long time. The temperature in K or in °C at which an observation, an experiment or a measurement is performed should always be stated. Nondecimal systems of units may still be used *as long as their units and symbols are not ambiguous.* When numbers are given for quantities that have units, it is necessary that the units be clearly defined for each number. The unit mmHg/L/sec for flow resistance is wrong, mmHg/(L/sec) is acceptable but $mmHg \cdot L^{-1} \cdot sec$ is preferred. Write mmHg rather than mm Hg; cmH_2O, rather than cm H_2O; *etc.*

Symbols and Abbreviations

In 1980, during the Budapest Congress of the International Union of Physiological Sciences (IUPS), the Commission on Respiratory Physiology approved the symbols and abbreviations proposed by a Committee that had been established to improve the glossary of terms and symbols used in respiratory physiology. This proposal was later also approved for publication in the *Handbook of Physiology* by the Publications Committee of the American Physiological Society. This proposal constitutes a valuable compromise between clarity and inherent logic on the one hand and widespread acceptance on the other. The use of these symbols is largely recommended for *Respiration Physiology*.

Main Symbols

The nature of the symbol is ordinarily denoted by a single capital letter, more rarely by a combination of letters (*e.g.* sG) or a Greek letter (*e.g.* α). Exceptions are the subdivisions of lung volume (*e.g.* FRC) and the forced respiratory maneuvers (*e.g.* FEV_1).

The main symbol can be modified by a symbol on top of it (bar, for mean or average; dot, for first derivative; two dots, for second derivative).

Modifiers

Modifiers further clarify the main symbol. Small capitals are normally used for the gas phase, standard chemical symbols for the chemical species, and lowercase letters in most other cases. The first modifier appears directly after the main symbol. Subsequent modifiers are either separated from the others by commas, or appear as subscripts. Chemical species are always represented by subscripts and follow all other modifiers (exception, O_2Cap). Modifiers denoting time (*e.g.*, FEV_1) or numerical designations (*e.g.* C_1) appear as subscripts.

The symbols are divided into three main groups, according to the three main areas in respiratory physiology: (1) Gas Exchange; (2) Mechanics of Breathing; (3) Control of Respiration. Some overlap does occur (*e.g.* C in Gas Exchange means *concentration in a liquid*; but *compliance* or *lung capacity* in Mechanics of Breathing), and it is important that authors clearly define every symbol that is not in unambiguous and widespread use at the first occurrence. It is of the utmost importance that each symbol be clearly understood from the context, and that each numerical value be expressed together with the corresponding unit(s).

On the following pages a list of examples is given, for each of the three groups of respiratory physiology, of Main Symbols, their Modifiers and Combinations (see also the endpages of the *Handbook of Physiology*, Section 3, 1985–1987).

Gas Exchange

Main Symbols

C	concentration in a liquid
Cap	capacity
D	diffusing capacity
D	diffusivity
f	frequency
F	fraction, fractional concentration of substance (*i.e.* in the dry gas phase)
G	conductance
M	amount of substance
P	pressure, total or partial
Q	volume of liquid
$\dot{Q}$	flow of liquid, perfusion
R	respiratory exchange ratio
S	saturation
V	volume of gas
$\dot{V}$	ventilation (not *minute volume* or *minute ventilation*, which are bad mixtures of symbols and units)
α	solubility coefficient
β	capacitance coefficient (= slope of a dissociation curve)
θ	reaction rate

Modifiers

a	arterial
A	alveolar
b	blood in general
B	barometric
c	capillary
c′	end-capillary
D	dead space
e	effective
E	expired
ET	end-expired, end-tidal
g	gas
H	heart, cardiac
I	inspired
L	pulmonary
la	left atrial
m	membrane
p	plasma
pa	pulmonary arterial
pc	pulmonary capillary
pv	pulmonary venous
pw	pulmonary wedge
R	respiratory
s	shunt
t	time *t*
T	tidal, total
ti	tissue
v	venous
$\bar{v}$	mixed venous
va	venous admixture
w	water
0	(zero) initial value

Special Symbols

ATPD	ambient temperature and pressure, dry
ATPS	ambient temperature and pressure, saturated with water vapor
BTPS	body temperature and pressure, saturated with water vapor
STPD	standard temperature and pressure, dry (0°C, 760 mmHg)

Examples of Combinations

$\beta\bar{v}_{O_2}$	capacitance coefficient of O_2 in mixed venous blood
Cc'_{O_2}	end-capillary O_2 concentration
$C\bar{v}_{O_2}$	concentration of O_2 in mixed venous blood
f or f_R	respiratory frequency
f_H	cardiac frequency
O_2Cap	O_2 capacity
Pa_{O_2}	partial pressure of O_2 in arterial blood
$P_{A_{O_2}}-Pa_{O_2}$	alveolar-arterial difference in partial pressure of O_2
P_{O_2}	partial pressure of O_2
$\dot{Q}$ or $\dot{V}b$	blood flow
$\dot{Q}_T$	cardiac output
Sa_{O_2}	saturation of hemoglobin with O_2 in arterial blood
$\dot{V}_A/\dot{Q}$	ventilation-perfusion ratio
$\dot{V}_E$	(expired) ventilation
$\dot{V}g$	gas flow rate
$\dot{V}max_{O_2}$	maximum O_2 consumption (also $\dot{V}_{O_2}max$)
$\dot{V}_{O_2}$, $\dot{M}_{O_2}$	O_2 consumption
$\dot{V}w$	water flow rate

Respiratory Mechanics

Main Symbols

C	compliance (capacity in symbols for subdivisions of lung volume)
E	elastance
f	frequency
G	conductance
I	inertance
P	pressure
R	resistance
sG	specific conductance
t	time
V	volume
W	work
$\dot{W}$	power
Z	impedance

(continued overleaf)

Modifiers

A	alveolar
ab	abdomen
am	ambient
ao	airway opening
aw	airway
B	barometric
bs	body surface
ca	convective acceleration
di	diaphragm
ds	downstream
dyn	dynamic
E	expiratory
el	elastic
es	esophageal
fr	frictional or flow resistive
ga	gastric
I	inspiratory
ia	intercostal/accessory muscles
L	transpulmonary or lung or pulmonary
lam	laminar
m	mouth
max	maximum
mus	muscle
pl	pleural
rc	rib cage
rel	relaxed or relaxation
rs	respiratory system
st	static
ti	tissue
tm	transmural
tur	turbulence
us	upstream
w	chest wall

Subdivisions of Lung Volume

CC	closing capacity
CV	closing volume
ERV	expiratory reserve volume
FRC	functional residual capacity
IC	inspiratory capacity
IRV	inspiratory reserve volume
RV	residual volume
TLC	total lung capacity
VC	vital capacity
V_T	tidal volume

Measurements on Forced Respiratory Maneuvers

FEV_t	forced expiratory volume in time interval t
$FEV_t/FVC\%$	percent of FVC expired in time interval t
FVC	forced vital capacity
PEF	peak expiratory flow

Examples of Combinations

C_L	lung compliance
$Cst,_L$	static lung compliance
P_A	alveolar pressure
Pao	pressure at the airway opening
$P_{E,m,max_{xx,TLC}}$	maximum expiratory mouth pressure at xx% of TLC
sGaw	specific airway conductance
$\dot{W}di$	diaphragmatic power
$W_{I,el,L}$	elastic work performed on the lung during inspiration

Control of Breathing

$Pm_{0.1}$	mouth occlusion pressure 0.1 sec after onset of inspiration
T_E	expiratory time
T_I	inspiratory time
T_T	total respiratory cycle duration

AUTHOR INDEX

Aaron, E.A., *see* Sharratt, M.T. (1987) 70:313

Abe, A.S., *see* Kruhøffer, M. (1987) 69:267

Accurso, F.J., B. Alpert, R.B. Wilkening, R.G. Petersen and G. Meschia: Time-dependent response of fetal pulmonary blood flow to an increase in fetal oxygen tension (1986) 63:43

Ackerman, R.A., *see* Weinstein, Y. (1986) 63:53

Adams, L., D.A. Schneider, E.R. Schertel, E.B. Strong and J.F. Green: Respiratory reflexes in the anesthetized miniature swine (1987) 70:343

Adams, M.E., *see* Oliven, A. (1988) 73:313

Adamson, T.P. and R.E. Burger: Sodium bicarbonate infusion increases discharge frequency of intrapulmonary chemoreceptors only at high CO_2 load (1986) 66:83

Adamson, T.P., *see* Hempleman, S.C. (1986) 66:53

Adolph, E.F.: Uptakes and uses of oxygen, from gametes to maturity: an overview (1983) 53:135

Affanni, J.M., L. Garcia Samartino, E.B. Casanova and R. Dezi: Absence of apnea in armadillos covered by soil (1987) 67:239

Agee, C.C., *see* Barnes, S.D. (1983) 53:285

Agostoni, E., A. Mugnai Cavangna and G. Citterio: Effects of stretch receptors of bronchi or trachea on genioglossus muscle activity (1987) 67:335

Agostoni, E. and L. Zocchi: Postinspiratory-ramp activity of diaphragm under inspiratory resistive load (1987) 69:369

Agostoni, E., G. Citterio and S. Piccoli: Reflex partitioning of inputs from stretch receptors of bronchi and thoracic trachea (1985) 60:311

Agostoni, E., L. Zocchi and P.G. Agostoni: Pleural liquid pressure at the caudal border of the lung (1989) 75:117

Agostoni, E., L. Zocchi, P.G. Agostoni and P.T. Macklem: Pleural pressure from abdominal to pulmonary rib cage: sweep of the lung border (1989) 75:105

Agostoni, E., P.G. Agostoni and L. Zocchi: Pleural liquid pressure in the zone of apposition and in the lung zone (1989) 75:357

Agostoni, E., *see* Citterio, G. (1983) 51:259

Agostoni, E., *see* Citterio, G. (1983) 53:307

Agostoni, E., *see* Citterio, G. (1985) 59:169

Agostoni, E., *see* Citterio, G. (1985) 62:203

Agostoni, E., *see* Citterio, G. (1986) 64:295

Agostoni, E., *see* Mortola, J.P. (1985) 62:195

Agostoni, P., M.E. Deffebach, W. Kirk and G.L. Brengelmann: Temperature dependence of intraparenchymal bronchial blood flow (1987) 68:257

Agostoni, P.G., *see* Agostoni, E. (1989) 75:105

Agostoni, P.G., *see* Agostoni, E. (1989) 75:117

Agostoni, P.G., *see* Agostoni, E. (1989) 75:357

Ahmad, D., *see* Morgan, W.K.C. (1984) 56:327

Ahmed, N., *see* Nakanishi, S. (1988) 74:139

Albano, J.-P. and L. Garnier: Bulbo-spinal respiratory effects originating from the splanchnic afferents (1983) 51:229

Albers, C. and K.G. Goetz: H^+ and Cl^- ion equilibrium across the red cell membrane in the carp (1985) 61:209

Albers, C., K.-H. Goetz and G.M. Hughes: Effect of acclimation temperature on intraerythrocytic acid-base balance and nucleoside triphosphates in the carp, *Cyprinus carpio* (1983) 54:145

Albers, C., R. Manz, D. Muster and G.M. Hughes: Affect of acclimation temperature on oxygen transport in the blood of the carp, *Cyprinus carpio* (1983) 52:165

Albertini, M., *see* Kraemer, R. (1983) 52:229

Aldrich, T.K., Transmission fatigue of the rabbit diaphragm (1987) 69:307

Alexander, J.K., *see* Huang, S.Y. (1984) 57:377
Ali, J.S., *see* Gordon, C.J. (1984) 56:73
Allgöwer, E., *see* Savoy, J. (1984) 56:195
Alpert, B., *see* Accurso, F.J. (1986) 63:43
Altose, M.D., R.J. Castele, A.F. Connors, Jr. and A.F. Dimarco: Effects of volume and frequency of mechanical ventilation on respiratory activity in humans (1986) 66:171
Altose, M.D., *see* Dimarco, A.F. (1984) 57:247
Altose, M.D., *see* Wolfson, D.A. (1983) 53:273
Alvarez-Buylla, R. and E.R. De Alvarez-Buyla: Carotid sinus receptors participate in glucose homeostatis (1988) 72:347
Alves da Silva, G., A. El-Manshawi, G.J.F. Heigenhauser and N.L. Jones: Measurement of mixed venous carbon dioxide pressure by rebreathing during exercise, (1985) 59:379
Amis, T.C., H.A. Jones and J.M.B. Hughes: Effect of posture on inter-regional distribution of pulmonary perfusion and $\dot{V}_A/\dot{Q}$ ratios in man (1984) 56:169
Amis, T.C., H.A. Jones and J.M.B. Hughes: Effect of posture on inter-regional distribution of pulmonary ventilation in man (1984) 56:145
Andersen, H.T., *see* Smeland, E.B. (1984) 56:245
Anderson, S.D., *see* Finney, M.J.B. (1987) 69: 277
Andronikou, S., M. Shirahata, A. Mokashi and S. Lahiri: Carotid body chemoreceptor and ventilatory responses to sustained hypoxia and hypercapnia in the cat (1988) 72:361
Anthonisen, N.R., *see* Bradley, C.A. (1983) 51:333
Anthonisen, N.R., *see* Filuk, R.B. (1988) 74:163
Anthonisen, N.R., *see* Long, G.R. (1989) 75:173
Ar, A. and H. Rahn: Pores in avian eggshells: gas conductance, gas exchange and embryonic growth rate (1985) 61:1
Ar, A., H. Girard and P. Dejours: Oxygen consumption of the chick embryo's respiratory organ, the chorioallantoic membrane (1987) 68:377
Arieli, R. and L.E. Farhi: Gas exchange in tidally ventilated and non-steadily perfused lung model (1985) 60:295
Arieli, R. and L.E. Farhi: Gravity-induced hyperventilation is caused by a reduced brain perfusion (1987) 69:237
Arieli, R., D.W. Cugell, U. Boutellier, N. Gavriely and A.E. Rubin: The effect of gravity on the response of ventilation to abrupt change in $F_{I_{CO_2}}$ (1988) 71:247
Arieli, R., *see* Boutellier, U. (1985) 62:141
Arieli, R.: Cardiogenic oscillations in expired gas: Origin and mechanism (1983) 52:191
Arieli, R.: Do the exposure time and P_{CO_2} affect in the terminal P_{O_2} in a confined atmosphere? (1985) 62:105
Armour, C.L., J.L. Black, N. Berend and A.J. Woolcock: The relationship between bronchial hyperresponsiveness to methacholine and airway smooth muscle structure and reactivity (1984) 58:223
Armour, C.L., *see* Black, J.L. (1984) 57:269
Armour, C.L., *see* Marthan, R. (1988) 71:157
Arnold, J.S., *see* Van Lunteren, E. (1988) 71:201
Arnould, P., *see* Marchal, F. (1986) 63:31
Arnup, M.E., *see* Bradley, C.A. (1983) 51:333
Arp, A.J., *see* Sanders, N.K. (1988) 71:57
Asson-Batres, M.A., *see* Stock, M.K. (1985) 62:217
Atlan, G., *see* Gaultier, C. (1984) 56:217
Austrheim, O. and S.S. Kraman: The effect of low density gas breathing on vesicular lung sounds (1985) 60:145

Baba, K., *see* Ito, M. (1985) 59:143
Baba, K., *see* Ito, M. (1985) 61:43
Bachofen, H., J. Weber, D. Wangensteen and E.R. Weibel: Morphometric estimates of diffusing capacity in lungs fixed under zone II and zone III conditions (1983) 52:41
Bachofen, H., *see* Schürch, S. (1985) 62:31
Baconnier, P., *see* Benchetrit, G. (1989) 75:199
Baconnier, P., *see* Muzzin, S. (1989) 75:157
Badier, M., P. Barthelémy, M. Soler and Y. Jammes: *In vivo* and *in vitro* studies on cold-induced airway response in normal and sensitized rabbits (1988) 73:1
Badier, M., *see* Barthélemy, P. (1988) 71:1
Baer, R.E., M. Leeman, G.A. Farkas, R. Naeije and A. De Troyer: The increased expiratory muscle use in upright dogs: role of cardiovascular receptors (1987) 70:359
Baghriche, M., *see* Kraemer, R. (1983) 52:229
Baier, H., *see* Bergey, M. (1987) 68:63
Baker, D.G. and H. Don: Reversal of the relation between respiratory drive and airway tone in cats (1988) 73:21
Baker, M.A., *see* Schroter, R.C. (1987) 70:97
Bakima, M., *see* Gustin, P. (1987) 69:299
Balakumar, M., *see* Long, G.R. (1989) 75:173

Ballam, G.O., T.L. Clanton and A.L. Kunz: Ventilatory pressure loading at constant pulmonary F_{CO_2} in *Gallus domesticus* (1984) 58:197

Ballintijn, C.M. and G.J. Punt: Gill arch movements and the function of the dorsal gill arch muscles in the carp (1985) 60:39

Ballintijn, C.M., B.L. Roberts and P.G.M. Luiten: Respiratory responses to stimulation of branchial vagus nerve ganglia of a teleost fish (1983) 51:241

Ballintijn, C.M., *see* De Graaf, P.J.F., 173 (1987) 69:183

Ballintijn, C.M., *see* Jüch, P.J.W. (1983) 51:95

Ballintijn, C.M.: The respiratory function of gill filament muscles in the carp (1985) 60:59

Ballum, G.O.: Breathing response of the tegu lizard to 1–4% CO_2 in the mouth and nose or inspired into the lungs (1985) 62:375

Bamford, O.S., G.S. Dawes, M.A. Hanson and R A. Ward: The effects of doxapram on breathing, heart rate and blood pressure in fetal lambs (1986) 66:387

Banchero, N., S.R. Kayar and A.J. Lechner: Increased capillarity in skeletal muscle of growing guinea pigs acclimated to cold and hypoxia (1985) 62:245

Banchero, N., *see* Blake, C.I. (1985) 61:347

Banchero, N., *see* Blake, C.I. (1985) 61:357

Banchero, N., *see* Kayar, S.R. (1985) 59:1

Banchero, N., *see* Kayar, S.R. (1987) 70:275

Band, D.M. and R.A.F. Linton: The effect of hypoxia on the response of the carotid body chemoreceptor to potassium in the anaesthetized cat (1988) 72:295

Band, D.M., R.A.F. Linton, R. Kent and F.L. Kurer: The effect of peripheral chemodenervation on the ventilatory response to potassium (1985) 60:217

Band, D.M., *see* Linton, R.A.F. (1985) 59:65

Band, D.M., *see* Linton, R.A.F. (1988) 74:49

Band, D.M., *see* Sneyd, J.R. (1988) 72:59

Banner, N.R., *see* Shea, S.A. (1988) 72:131

Banzett, R.B., J.P. Butler, C.S. Nations, G.M. Barnas, J.L. Lehr and J.H. Jones: Inspiratory aerodynamic valving in goose lungs depends on gas density and velocity (1987) 70:287

Banzett, R.B., M.B. Reid and J. Lehr: High frequency oscillation of the lungs alone lengthens expiration in dogs (1985) 61:57

Banzett, R.B., *see* Butler, J.P. (1988) 72:241

Banzett, R.B., *see* Wang, N. (1988) 73:111

Bark, H. and S.M. Scharf: Effect of phrenic nerve stimulation on neural transmission and diaphragmatic force generation in the dog (1986) 63:187

Barnas, G., *see* Mückenhoff, K. (1989) 75:267

Barnas, G.M. and R.E. Burger: Interaction of temperature with extra- and intrapulmonary chemoreceptor control of ventilatory movements in the awake chicken (1983) 54:223

Barnas, G.M. and W. Rautenberg: Cardiovascular and blood gas changes during panting responses induced by ambient or spinal cord heating in the pigeon (1984) 57:89

Barnas, G.M., M. Gleeson and W. Rautenberg: Effect of bilateral vagotomy on arterial acid-base stability during panting in the pigeon (1986) 66:293

Barnas, G.M., S.C. Hempleman and R.E. Burger: Effect of temperature on the CO_2 sensitivity of avian intrapulmonary chemoreceptors (1983) 54:233

Barnas, G.M., *see* Banzett, R.B. (1987) 70:287

Barnas, G.M., *see* Stearns, R.C. (1987) 67:23

Barnes, S.D., C.C. Agee, R.J. Peace and C.W. Leffler: Effects of elevated P_{O_2} upon tracheal explants (1983) 53:285

Barnhart, M.C., *see* Bucher, T.L. (1984) 55:277

Barr, H.A., *see* Daniels, C.B. (1989) 75:335

Barr, H.A., *see* Nicholas, T.E. (1983) 52:69

Barrow, R.E. and B.A. Hills: Properties of four lung surfactants and their mixtures under physiological conditions (1983) 51:79

Barrow, R.E.: Volume-pressure cycles from air and liquid-filled intact rabbit lungs (1986) 63:19

Bartels, H., *see* Pietschmann, M. (1985) 59:347

Bartels, H., *see* Rothstein, S. (1984) 57:15

Barthelemy, L., *see* Sebert, P. (1985) 62:349

Barthelemy, P., *see* Jammes, Y. (1983) 54:41

Barthelemy, P., *see* Jammes, Y. (1986) 63:347

Barthelémy, P., *see* Badier, M. (1988) 73:1

Barthélemy, P., M. Badier and Y. Jammes: Interaction between SO_2 and cold-induced bronchospasm in anesthetized rabbits (1988) 71:1

Bartholomew, G.A., *see* Bucher, T.L. (1986) 65:197

Bartlett, D., Jr. and G.F. Birchard: Effects of hypoxia on lung volume in the garter snake (1983) 53:63

Bartlett, D., Jr., and S.L. Knuth: Human vocal cord movements during voluntary hyperventilation (1984) 58:289

Bartlett, D., Jr. and W.M. St. John: Influence of morphine on respiratory activities of phrenic and hypoglossal nerves in cats (1986) 64:289

Bartlett, D., Jr. and W.M. St. John: Influence of lung volume on phrenic, hypoglossal and mylohyoid nerve activities (1988) 73:97

Bartlett, D., Jr., J.P. Mortola and E.J. Doll: Respiratory mechanics and control of the ventilatory cycle in the garter snake (1986) 64:13

Bartlett, D., Jr., S.L. Knuth and D.K. Ward: Influence of extreme hypercapnia on respiratory motor nerve activity in cats (1987) 70:173

Bartlett, D., Jr., *see* Bonora, M. (1985) 60:181

Bartlett, D., Jr., *see* Daubenspeck, J.A. (1983) 54:307

Bartlett, D., Jr., *see* Daubenspeck, J.A. (1988) 73:87

Bartlett, D., Jr., *see* Fordyce, W.E. (1984) 55: 81

Bartlett, D., Jr., *see* Furilla, R.A. (1988) 74:311

Bartlett, D., Jr., *see* Hwang, J.-C., 341 (1984) 55:355

Bartlett, D., Jr., *see* Mortola, J. (1987) 67:137

Bartlett, D., Jr., *see* St. John, W.M. (1985) 60: 347

Barts, P.W.J.A., *see* Teppema, L.J. (1983) 53: 379

Barts, P.W.J.A., *see* Teppema, L.J. (1984) 58: 123

Barts, P.W.J.A., *see* Teppema, L.J. (1985) 61: 301

Bassett, D.J.P., E. Bowen-Kelly and G.G. Bierkamper: Adaptation of a perfused rat hemidiaphragm preparation to the study of intermediary metabolism (1988) 73:163

Bates, J.H.T., P.D. Sly, T. Kochi and J.G. Martin: The effect of a proximal compliance on interrupter measurements of resistance (1987) 70:301

Baudinette, R.V., B.J. Gannon, R.G. Ryall and P.B. Frappell: Changes in metabolic rates and blood respiratory characteristics during pouch development of a marsupial, *Macropus eugenii* (1988) 72:219

Baudinette, R.V., *see* Ribbons, K.A. (1989) 75:1

Baudinette, R.V., *see* Weibel, E.R. (1983) 54:173

Baumann, R., G. Mazur and G. Braunitzer: Oxygen binding properties of hemoglobin from the white rhinoceros ($|\beta_2$-GLU$|$) and tapir (1984) 56:1

Baumann, R., *see* Meuer, H.-J. (1988) 71:331

Baumann, R., *see* Rothstein, S. (1984) 57:15

Beadle, R.E., *see* Powers, S.K. (1987) 70:251

Beamish, S., *see* Jeyaranjan, R. (1987) 68:203

Bech, C., K. Johansen, R. Brent and S. Nicol: Ventilatory and circulatory changes during cold exposure in the Pekin duck *Anas platyrhynchos* (1984) 57:103

Beck, K.C., *see* Lai-Fook, S.J. (1984) 55:223

Beckler, P.E.: Blood-base status of an awake heterothermic rodent, *Spermophilus tereticaudus* (1984) 57:307

Becquemin, M.H., M. Roy, D. Robeau, S. Bonnefous, J. Piechowski and A. Teillac: Inhaled particle deposition and clearance from the normal respiratory tract (1987) 67:147

Bee, D. and R.A. Wach: Hypoxic pulmonary vasoconstriction in chronically hypoxic rats (1984) 56:91

Behrisch, H.W. and R. Elsner: Enzymatic adaptations to asphyxia in the harbor seal and dog (1984) 55:239

Bellemare, F. and B. Bigland-Ritchie: Assessment of human diaphragm strength and activation using phrenic nerve stimulation (1984) 58:263

Bellina, R., *see* Miserocchi, G. (1986) 65:13

Belman, M.J., *see* Sieck, G.C. (1985) 61:137

Ben Jebria, A., *see* Tabka, Z. (1987) 67:115

Benavides, C.E., R. Pérez, M. Espinoza, G. Cabello, R. Riquelme, J.T. Parer and A.J. Llanos: Cardiorespiratory functions in the fetal llama (1989) 75:327

Benchetrit, G., S.A. Shea, T. Pham Dinh, S. Bodocco, P. Baconnier and A. Guz: Individuality of breathing patterns in adults assessed over time (1989) 75:199

Benchetrit, G., *see* Muzzin, S. (1989) 75:157

Benchetrit, G., *see* Shea, S.A. (1989) 75:211

Bénichou, M., *see* Lorino, A.M. (1988) 73:155

Bennet, W.D. and W. Mitzner: *In vivo* hysteresis of airspace dimensions measured by aerosol recovery (1987) 67:85

Bennett, F.M. and W.M. St. John: Function in ventilatory control of respiratory neurons at the pontomedullary junction (1985) 61:153

Berend, N., *see* Armour, C.L. (1984) 58:223

Berend, N., *see* Souhrada, M. (1983) 52:245

Berend, N., *see* Walker, B.R. (1984) 56:45

Berezanski, D.J., *see* Filuk, R.B. (1988) 74:163

Berger, P.J., A.M. Walker, R. Horne, V. Brodecky, M.H. Wilkinson, F. Wilson and J.E. Maloney: Phasic respiratory activity in the fetal lamb during late gestation and labour (1986) 65:55

Berger, P.J., *see* Soust, M. (1987) 67:283
Bergey, M. and H. Baler: Lung mechanical properties in the West Indian Manatee (*Trichechus manatus*) (1987) 68:63
Berkenbosch, A., J.H.G.M. van Beek, C.N. Olivier, J. de Goede and Ph.H. Quanjer: Central respiratory CO_2 sensitivity at extreme hypocapnia (1984) 55:95
Berkenbosch, A., *see* Schuitmaker, J.J. (1986) 64:69
Berkenbosch, A., *see* Schuitmaker, J.J. (1987) 67:69
Berkenbosch, A., *see* Van Beek, J.H.G.M. (1983) 51:379
Berkenbosch, A., *see* Van Beek, J.H.G.M. (1984) 57:171
Berkenbosch, A., *see* Van Beek, J.H.G.M. (1986) 63:65
Bermett, F.M. and W.E. Fordyce: Characteristics of the ventilatory exercise stimulus (1985) 59:55
Berry, D., *see* Robertson, B. (1985) 61:265
Berry, J.D., *see* Wegner, C.D. (1984) 55:47
Berssenbrugge, A.D., *see* Bisgard, G.E. (1986) 65:113
Berssenbrugge, A.D., *see* Daristotle, L. (1987) 70:63
Bettice, J.A., D. Owens and S. Riley: The effects of hypocapnia on intracellular pH and bicarbonate (1984) 55:121
Bianchi, A.L., *see* St. John, W.M. (1983) 51:361
Bickler, P.E., L.A. Maginniss and F.L. Powell: Intrapulmonary and extrapulmonary shunt in ducks (1986) 63:151
Bicudo, J.E.P.W. and S. Campiglia: A morphometric study of the tracheal system of *Peripatus acacioi* Marcus and Marcus (Onychophora) (1985) 60:75
Bierkamper, G.G., *see* Bassett, D.J.P. (1988) 73:163
Biewener, A.A., G.W. Soghikian and A.W. Crompton: Regulation of respiratory airflow during panting and feeding in the dog (1985) 61:185
Bigland-Ritchie, B., *see* Bellemare, F. (1984) 58:263
Birchard, G.F. and S.M. Tenney: The hypoxic ventilatory response of rats with increased blood oxygen affinity (1986) 66:225
Birchard, G.F., D.F. Boggs and S.M. Tenney: Effect of perinatal hypercapnia on the adult ventilatory response to carbon dioxide (1984) 57:341
Birchard, G.F., *see* Bartlett, D., Jr. (1983) 53:63
Bisgard, G.E., M.A. Busch, L. Daristotle, A.D. Berssenbrugge and H.V. Forster: Carotid body hypercapnia does not elicit ventilatory acclimatization in goats (1986) 65:113
Bisgard, G.E., N.A. Kressin, A.M. Nielsen, L. Daristotle, C.A. Smith and H.V. Forster: Dopamine blockade alters ventilatory acclimatization to hypoxia in goats (1987) 69:245
Bisgard, G.E., *see* Busch, M.A. (1983) 54:353
Bisgard, G.E., *see* Daristotle, L. (1987) 70:63
Bisgard, G.E., *see* Engwall, M.J.A. (1988) 74:335
Bisgard, G.E., *see* Hudgel, D.W. (1986) 64:202
Bisgard, G.E., *see* Kressin, N.A. (1986) 65:169
Bisgard, G.E., *see* Manohar, M. (1984) 58:111
Bisgard, G.E., *see* Nielsen, A.M. (1983) 53:71
Bisgard, G.E., *see* Nielsen, A.M. (1986) 65:267
Bishop, M.J., *see* Cheney, F.W. (1989) 75:11
Bissonnette, J.M., *see* Hohimer, A.R. (1983) 52:99
Bissonnette, J.M., *see* Hohimer, A.R. (1985) 61:327
Bizios, R., *see* Van Der Zee, H. (1985) 61:31
Black, J.L., C.L. Armour and J. Shaw: The effect of alteration in temperature on contractile responses in human airways in vitro (1984) 57:269
Black, J.L., *see* Armour, C.L. (1984) 58:223
Black, J.L., *see* Finney, M.J.B. (1987) 69:277
Black, J.L., *see* Marthan, R. (1988) 71:157
Blake, C.I. and N. Banchero: Effects of cold and hypoxia on ventilation and oxygen consumption in awake guinea pigs (1985) 61:357
Blake, C.I. and N. Banchero: Ventilation and oxygen consumption in the guinea pig (1985) 61:347
Blank, S., V. Chen and C.D. Ianuzzo: Biochemical characteristics of mammalian diaphragms (1988) 74:115
Bledsoe, T.A., *see* St. John, W.M. (1985) 62:61
Boatman, E.S., *see* Shimura (1985) 62:293
Bocking, A.D., *see* Harding, R. (1984) 57:47
Bodocco, S., *see* Benchetrit, G. (1989) 75:199
Bogen, D.K., *see* Ogilvie, M.D. (1989) 75:289
Boggs, D.F. and S.M. Tenney: Scaling respiratory pattern and respiratory 'drive' (1984) 58:245
Bohn, B., *see* Girard, F. (1987) 68:227
Bohn, B., *see* Kister, J. (1988) 73:367
Bolser, D.C., *see* Shannon, R. (1985) 60:193

Bonavia, D., F. Léon-Velarde, C. Monge C., M.I. Sanchez-Griñán and J. Whittembury: Acute mountain sickness: Critical appraisal of the Pariacaca story and on-site study (1985) 62:125

Böning, D., *see* Schmidt, W. (1987) 68:215

Bonnefous, S., *see* Becquemin, M.H. (1987) 67:147

Bonora, M. and H. Gautier: Influence of dopamine and norepinephrine on the central ventilatory response to hypoxia in conscious cats (1988) 71:11

Bonora, M. and H. Gautier: Maturation changes in body temperature and ventilation during hypoxia in kittens (1987) 68:359

Bonora, M., D. Bartlett, Jr., and S.L. Knuth: Changes in upper airway muscle activity related to head position in awake cats (1985) 60:181

Bonora, M., *see* Gautier, H. (1986) 65:181

Bonora, M., *see* Parot, S. (1984) 58:253

Boogs, D.F., *see* Birchard, G.F. (1984) 57:341

Booth, C.E., B.R. McMahon, P.L. De Fur and P.R.H. Wilkes: Acid–base regulation during exercise and recovery in the blue crab, *Callinectes sapidus* (1984) 58:359

Boudey, C., *see* Guenard, H. (1989) 75:235

Boudinot, E., *see* Morin-Surun, M.-P. (1984) 58:323

Boule, M., C. Gaultier and F. Girard: Breathing pattern during exercise in untrained children (1989) 75:225

Boutellier, U. and L.E. Farhi: Influence of breathing frequency and tidal volume on cardiac output (1986) 66:123

Boutellier, U., R. Arieli and L.E. Farhi: Ventilation and CO_2 response during + Gz acceleration (1985) 62:141

Boutellier, U., *see* Arieli, R. (1988) 71:247

Boutilier, R.G., G. Dobson, U. Hoeger and D.J. Randall: Acute exposure to graded levels of hypoxia in rainbow trout (*Salmo gairdneri*:metabolic and respiratory adaptations) (1988) 71:69

Boutilier, R.G., *see* Ferguson, R.A. (1988) 74: 65

Boutilier, R.G., *see* Heming, T.A. (1986) 65:223

Boutillier, R.G., G.K. Iwama, T.A. Heming and D.J. Randall: The apparent pK of carbonic acid in rainbow trout blood plasma 5 and 15°C (1985) 61:237

Bowen-Kelly, E., *see* Bassett, D.J.P. (1988) 73: 163

Bowes, G., *see* England, S.J. (1985) 60:357

Brackenbury, J.H. and M. Gleeson: Effects of P_{CO_2} on respiratory pattern during thermal and exercise hyperventilation in domestic fowl (1983) 54:109

Bradley, C.A., M.E. Arnup and N.R. Anthonisen: Lobar blood flow, blood volume and water content in atelectasis (1983) 51:333

Bradley, C.L., *see* Norfleet, W.T. (1987) 70:369

Bradley, M.E., *see* Clarke, J.R. (1987) 68:121

Brain, J.C., *see* Stearns, R.C. (1987) 67:23

Brambilla-Sant'Ambrogio, F., *see* Sant'Ambrogio, G. (1986) 64:45

Brancatisano, A., S.M. Kelly, A. Tully and L.A. Engel: Effect of expiratory glottic constriction on lung volume and pattern of breathing in adult dogs (1987) 67:53

Brancatisano, T.P., D.S. Dodd and L.A. Engel: Responses of the posterior cricoarytenoid and alae nasi muscles to increased chemical drive in man (1986) 64:177

Braumann, K.M., *see* Schmidt, W. (1987) 68:215

Braunitzer, G., *see* Baumann, R. (1984) 56:1

Braunitzer, G., *see* Weber, R.E. (1987) 69:347

Breen, P.H., *see* Mayers, I. (1987) 69:149

Brengelmann, G.L., *see* Agostoni, P. (1987) 68:257

Brent, R., *see* Bech, C. (1984) 57:103

Bridges, C.R., B. Pelster and P. Scheid: Oxygen binding in blood of *Xenopus laevis* (Amphibia) and evidence against Root effect (1985) 61:125

Bridges, C.R., M.P. Hlastala, G. Riepl and P. Scheid: Root effect induced by CO_2 and by fixed acid in the blood of the eel, *Anguila angiulla* (1983) 51:275

Bridges, C.R., S. Morris and M.K. Grieshaber: Modulation of haemocyanin oxygen affinity in the intertidal prawn *Palaemon elegans* (Rathke) (1984) 57:189

Bridges, C.R., *see* Pelster, B. (1988) 71:355

Brill, R.W., *see* Milsom, W.K. (1986) 66:193

Brodecky, V., *see* Berger, P.J. (1986) 65:55

Brown, A.C., *see* Wall, M.A. (1987) 69:287

Bruce, E.N., *see* Haxhiu, M.A. (1984) 57:153

Brumley, G., *see* Egberts, J. (1984) 57:213

Brun-Pascaud, M., *see* Girard, P. (1984) 57:23

Bryan, A.C., *see* England, S.J. (1985) 60:357

Bucher, S., *see* Faridy, E.E. (1988) 72:171

Bucher, S., *see* Faridy, E.E. (1988) 72:187

Bucher, T.L. and G.A. Bartholomew: The early ontogeny of ventilation and homeothermy in an altricial bird, *Agapornis roseicollis* (Psittaciformes) (1986) 65:197

Bucher, T.L. and M.C. Barnhart: Varied egg gas conductance, air cell gas tensions and development in *Agapornis roseicollis* (1984) 55:277

Bucher, T.L.: Ratios of hatchling and adult mass-independent metabolism: a physiological index to the altricial-precocial continuum (1986) 65:69

Buist, A.S., *see* Wall, M.A. (1987) 69:287

Burbach, J.A., *see* Mardini, I.A. (1986) 66:157

Bureau, M.A., J. Lamarche, P. Foulon and D. Dalle: The ventilatory response to hypoxia in the newborn lamb after carotid body denervation (1985) 60:109

Bureau, M.A., *see* Carroll, J.L. (1988) 73:343

Bureau, M.A., *see* Davis, G.M. (1988) 71:307

Burger, R.E., *see* Adamson, T.P. (1986) 66:83

Burger, R.E., *see* Barnas, G.M., 223 (1983) 54:233

Burger, R.E., *see* Fedde, M.R. (1986) 66:109

Burger, R.E., *see* Hempleman, S.C. (1984) 57:317

Burger, R.E., *see* Hempleman, S.C. (1985) 61:179

Burger, R.E., *see* Hempleman, S.C. (1986) 66: 53

Burggren, W. and M. Doyle: Ontogeny of regulation of gill and lung ventilation in the bullfrog, *Rana catesbeiana* (1986) 66:279

Burggren, W. and R. Moalli: 'Active' regulation of cutaneous gas exchange by capillary recruitment in amphibians: Experimental evidence and a revised model for skin respiration (1984) 55:379

Burggren, W.W., R.K. Dupré and S.C. Wood: Allometry of red cell oxygen binding and hematology in larvae of the salamander, *Ambystoma tigrinum* (1987) 70:73

Burke, W., *see* Mekjavic, I.B. (1987) 70:121

Burks, J.E., *see* Forkert, L. (1984) 58:279

Burnett, L.E. and B.R. McMahon: Facilitation of CO_2 excretion by carbonic anhydrase located on the surface of the basal membrane of crab gill epithelium (1985) 62:341

Burnham, E.W., *see* Snyder, G.K. (1985) 62:135

Burr, D. and J.D. Sinclair: The effect of adenosine on respiratory chemosensitivity in the awake rat (1988) 72:47

Burri, P.H., *see* Zeltner, T.B. (1987) 67:247

Burri, P.H., *see* Zeltner, T.B. (1987) 67:269

Burtin, B., J.-C. Massabuau and P. Dejours: Ventilatory regulation of extracellular pH in crayfish exposed to changes in water titration alkalinity and NaCl concentration (1986) 65:235

Burtin, B., *see* Sakakibara, Y. (1987) 69:359

Busch, M., *see* Manahor, M. (1984) 58:111

Busch, M.A., G.E. Bisgard, J.E. Mesina and H.V. Forster: The effects of unilateral carotid body excision on ventilatory control in goats (1983) 54:353

Busch, M.A., *see* Bisgard, G.E. (1986) 65:113

Butler, J.P., R.B. Banzett and J.J. Fredberg: Inspiratory valving in avian bronchi: aerodynamic considerations (1988) 72:241

Butler, J.P., *see* Banzett, R.B. (1987) 70:287

Butler, J.P., *see* Wang, N. (1988) 73:111

Butler, P.J. and A.J. Woakes: Heart rate in humans during underwater swimming with and without breath-hold (1987) 69:387

Butler, P.J. and E.W. Taylor: Factors affecting the respiratory and cardiovascular responses to hypercapnic hypoxia, in mallard ducks (1983) 53:109

Buttress, J.A., *see* Harding, R. (1987) 68:177

Bye, P., *see* Mannix, S.E. (1984) 58:87

Byers, R.L. and G.K. Snyder: Effects of maturation on tissue capillarity in chickens (1984) 58:137

Byers, R.L., *see* Snyder, G.K. (1984) 58:151

Byford, L., *see* Moffat, S.L. (1985) 62:1

Byford, L., *see* Moffat, S.L. (1986) 66:95

Cabello, G., *see* Benavides, C.E. (1989) 75:327

Caddy, D.J., *see* Harding, R. (1987) 68:177

Caduff, J.H., *see* Zeltner, T.B. (1987) 67:247

Cai, Y.N., *see* Ou, L.C. (1985) 62:85

Caldeira, M.P.R., P.H.N. Saldiva and W.A. Zin: Vagal influences on respiratory mechanics, pressures, and control in rats (1988) 73:43

Cameron, I.R., *see* Davidson, A.C. (1985) 60:227

Cameron, I.R., *see* Twort, C.H.C. (1986) 66:259

Campbell, E.J.M., *see* Mahutte, C.K. (1983) 51:131

Campiglia, S., *see* Bicudo, J.E.P.W. (1985) 60:75

Carroll, J.L. and M.A. Bureau: Peripheral chemoreceptor CO_2 response during hyperoxia in the 14-day-old awake lamb (1988) 73:343

Carù, B., *see* Cerretelli, P. (1988) 74:355

Casanave, E.B., *see* Affanni, J.M. (1987) 67:239

Cassidy, S.S. and M.S. Haynes: The effects of ventilation with positive end-expiratory pressure on the bronchial circulation (1986) 66:269
Cassidy, S.S., *see* Coast, J.R. (1989) 75:279
Cassidy, S.S.: Stimulus-response curves of the lung inflation cardio-depressor reflex (1984) 57:259
Castele, R.J., *see* Altose, M.D. (1986) 66:171
Cates, D., *see* Moriette, G. (1985) 62:387
Cerretelli, P., B. Grassi, A. Colombini, B. Carù and C. Marconi: Gas exchange and metabolic transients in heart transplant recipients (1988) 74:355
Cerretelli, P., *see* Marconi, C. (1988) 74:1
Cerretelli, P., *see* Pendergast, D.R. (1985) 61:317
Cerretelli, P., *see* Samaja, M. (1986) 64:191
Chamberlain, M.J., *see* Morgan, W.K.C. (1984) 56:327
Champagnat, J., *see* Morin-Surun, M.-P. (1984) 58:323
Chandler Deal, E., Jr., M.A. Haxhiu, M.P. Norcia, E. Van Lunteren and N.S. Cherniack: Cooling the intermediate area of the ventral medullary surface affects tracheal responses to hypoxia (1987) 69:335
Chang, H.K. and A. Harf: High-frequency ventilation: A review (1984) 57:135
Chang, H.K., *see* Hakim, T.S. (1985) 61:115
Chang, H.K., *see* Harf, A. (1983) 54:31
Chang, H.K., *see* Menon, A.S. (1984) 55:255
Chapleau, M.W., L.B. Wilson, T.J. Gregory and M.G. Levitzky: Chemoreceptor stimulation interferes with regional hypoxic pulmonary vasoconstriction (1988) 71:185
Chappell, M.A.: Maximum oxygen consumption during exercise and cold exposure in deer mice, *Peromyscus maniculatus* (1984) 55:367
Chen, V., *see* Blank, S. (1988) 74:115
Cheney, F.W., B.L. Eisenstein and M.J. Bishop: Alveolar hypoxia, inhibition of hypoxic pulmonary vasoconstriction, and permeability edema (1989) 75:11
Cheney, F.W., Jr., *see* Tyler, D.C. (1984) 56:261
Cherniack, N.S., *see* Chandler Deal, E., Jr. (1987) 69:335
Cherniack, N.S., *see* Chonan, T. (1988) 73:383
Cherniack, N.S., *see* Haxhiu, M.A. (1984) 57:153
Cherniack, N.S., *see* Haxhiu, M.A. (1984) 58:65
Cherniack, N.S., *see* Haxhiu, M.A. (1986) 64:351
Cherniack, N.S., *see* Haxhiu, M.A. (1987) 70:183
Cherniack, N.S., *see* Mitra, J. (1983) 54:55
Cherniack, N.S., *see* Mitra, J. (1988) 74:35
Cherniack, N.S., *see* Overholt, J.L. (1988) 74:299
Cherniack, N.S., *see* van Lunteren, E. (1983) 53:87
Cherniack, N.S., *see* Van Lunteren, E. (1986) 63:361
Cherniack, N.S., *see* Van Lunteren, E. (1988) 71:201
Cherniack, N.S., *see* Van Lunteren, E. (1988) 72:303
Cherniak, N.S., *see* Mitra, J. (1985) 60:377
Chesler, E., *see* Weir, E.K. (1983) 53:295
Chiang, S.T., *see* Green, J. (1988) 74:239
Chien, C.-T., *see* Hwang, J.-C. (1988) 73:175
Childress, J.J., *see* Sanders, N.K. (1988) 71:57
Chiocchio, S.R., S.M. Hilton, J.H. Tramezzani and P. Willshaw: Loss of peripheral chemoreflexes to hypoxia after carotid body removal in the rat (1984) 57:235
Chodobska, J., *see* Lipski, J. (1984) 57:279
Chonan, T., A.M. ElHefnaway, O.P. Simonetti and N.S. Cherniack: Rate of elimination of excess CO_2 in humans (1988) 73:383
Choukroun, M.-L., C. Kays and P. Varène: Effects of water temperature on pulmonary volumes in immersed human subjects (1989) 75:255
Chu, C., *see* Jones, D.R. (1988) 73:243
Citterio, G. and E. Agostoni: Discontinuity between inspiratory and postinspiratory diaphragm activity in man and rabbit (1986) 64:295
Citterio, G. and E. Agostoni: Inspiratory facilitation and inhibition from pulmonary stretch receptors in rabbits (1983) 53:307
Citterio, G., J.P. Mortola and E. Agostoni: Reflex effects on breathing of laryngeal denervation, negative pressure and SO_2 in upper airways (1985) 62:203
Citterio, G., S. Piccoli and E. Agostoni: Breathing pattern and diaphragm EMG after SO_2 in rabbit intra- or extrathoracic airways (1985) 59:169
Citterio, G., S. Sironi, S. Piccoli and E. Agostoni: Slow to fast shift in inspiratory muscle fibers during heat tachypnea (1983) 51:259
Citterio, G., *see* Agostoni, E. (1985) 60:311
Citterio, G., *see* Agostoni, E. (1987) 67:335
Citterio, G., *see* Mortola, J.P. (1985) 62:195
Claassen, H., *see* Hoppler, H. (1987) 69:27
Claassen, H., *see* Kayar, S.R. (1986) 64:1
Clague, H.W., *see* Morgan, W.K.C. (1984) 56:327

Claireaux, G., S. Thomas, B. Fievet and R. Motais: Adaptive respiratory responses of trout to acute hypoxia. II. Blood oxygen carrying properties during hypoxia (1988) 74:91
Claireaux, G., *see* Fievet, B. (1988) 74:99
Claireaux, G., *see* Thomas, S. (1988) 74:77
Clancy, R.L., *see* Gonzalez, N.C. (1984) 56:289
Clancy, R.L., *see* Gonzalez, N.C. (1986) 64:213
Clancy, R.L., *see* Gonzalez, N.C. (1986) 65:331
Clancy, R.L., *see* Widener, G. (1986) 65:341
Clanton, T.L., *see* Ballam, G.O. (1984) 58:197
Clark, C., *see* Egberts, J. (1984) 57:213
Clarke, J.R., L.D. Homer, E.T. Flynn and M.E. Bradley: Tracheal pressure and impedance as determinants of gas exchange during high frequency ventilation (1987) 68:121
Clarke, M., *see* Warley, A. (1989) 75:183
Clutario, B.C., *see* Kumar, A. (1983) 51:195
Coast, J.R., R.M. Romeo and S.S. Cassidy: Diaphragmatic vasodilation elicited by pulmonary C-fiber stimulation (1989) 75:279
Coates, A.L., *see* Katsardis, C.V. (1986) 65:257
Cohen, M.I., *see* Donnelly, D.F. (1985) 61:69
Cohen, M.I., *see* Sica, A.L. (1984) 56:339
Cohen, M.I., *see* Sica, A.L. (1985) 62:153
Cole, R.P.: Skeletal muscle function in hypoxia: Effect of alteration of intracellular myoglobin (1983) 53:1
Colebatch, H.J.H. and C.K.Y. Ng: A longitudinal study of pulmonary distensibility in healthy adults (1986) 65:1
Coleridge, H.M., *see* Jonzon, A. (1988) 72:19
Coleridge, H.M., *see* Pisarri, T.E. (1986) 64:29
Coleridge, H.M., *see* Roberts, A.M. (1988) 72:35
Coleridge, H.M., *see* Yu, J. (1987) 68:161
Coleridge, J.C.G., *see* Jonzon, A. (1988) 72:19
Coleridge, J.C.G., *see* Pisarri, T.E. (1986) 64:29
Coleridge, J.C.G., *see* Roberts, A.M. (1988) 72:35
Coleridge, J.C.G., *see* Yu, J. (1987) 68:161
Colombini, A., *see* Cerretelli, P. (1988) 74:355
Comis, A., *see* Holland, R.A.B. (1988) 73:69
Commenges, D., *see* Ferrus, L. (1984) 56:11
Conley, K.E., E.R. Weibel, C.R. Taylor and H. Hoppeler: Aerobic capacity estimated by exercise *vs* cold-exposure: Endurance training effects in rats (1985) 62:273
Conley, K.E., S.R. Kayar, K. Rösler, H. Hoppeler, E.R. Weibel and C.R. Taylor: Adaptive variation in the mammalian respiratory system in relation to energetic demand: IV. Capillaries and their relationship to oxidative capacity (1987) 69:47
Connors, Jr., A.F., *see* Altose, M.D. (1986) 66:171
Constantinopol, M., *see* Weibel, E.R. (1987) 69: 81
Coon, R.L., E.J. Zuperku and J.P. Kampine: Systemic arterial pH servocontrolled ventilator simulation of the respiratory control system (1984) 58:345
Cooper, C., *see* Rurak, D.W. (1984) 55:23
Cooper, D.M., *see* Springer, C. (1988) 74:55
Cooper, J.A., *see* Van der Zee, H. (1986) 64:125
Corda, M., *see* Pantaleo, T. (1986) 64:135
Cosio, M., *see* King, M. (1985) 62:47
Cotton, D.J., J.T. Mink and B.L. Graham: Effect of high negative inspiratory pressure on single breath CO diffusing capacity (1983) 54:19
Cotton, D.J., M. Sheiban and L.A. Engel: Volume acceleration as an index of neuromuscular output (1988) 71:117
Courteheuse, C., *see* Savoy, J. (1984) 56:195
Couture, J., *see* Derenne, J.-Ph. (1986) 65:303
Cover, D., *see* Mannix, S.E. (1984) 58:87
Cover, D., *see* Maxwell, D.L. (1985) 61:255
Craddock, P.R., *see* Weir, E.K. (1983) 53:295
Crance, J.-P., *see* Marchal, F. (1987) 68:311
Crance, J.P., *see* Marchal, F. (1986) 63:31
Crance, J.P., *see* Marchal, F. (1988) 73:201
Crapo, J.D. and R.O. Crapo: Comparison of total lung diffusion capacity and the membrane component of diffusion capacity as determined by physiologic and morphometric techniques (1983) 51:183
Crapo, R.O., *see* Crapo, J.D. (1983) 51:183
Crawford, A.B.H., D. Dodd and L.A. Engel: Changes in rib cage shape during quiet breathing, hyperventilation and single inspirations (1983) 54:197
Crawford, A.B.H., M. Makowska and L.A. Engel: Effect of tidal volume on ventilation maldistribution (1986) 66:11
Crompton, A.W., *see* Biewener, A.A. (1985) 61:185
Cros, A.M., *see* Guenard, H. (1989) 75:235
Cross, C.E., *see* Hornof, W.J. (1988) 72:375
Cugell, D.W., *see* Arieli, R. (1988) 71:247
Curstedt, T., *see* Robertson, B. (1985) 61:265
Cymerman, A., *see* Moore, L.G. (1987) 70:195

D'Angelo, E.: Effects of body temperature, passive limb motion and level of anesthesia on the activity of the inspiratory muscles (1984) 56:105

D'Angelo, E.: Verification of a model for the mechanisms controlling expiratory duration in rabbits under various conditions (1985) 59:239

Dalle, D., *see* Bureau, M.A. (1985) 60:109

Daniel, E.E., M. Kannan, C. Davis and V. Posey-Daniel: Ultrastructural studies on the neuromuscular control of human bronchial muscle (1986) 63:109

Daniel, E.E., *see* Mansour, S. (1988) 72:283

Daniels, C.B., H.A. Barr and T.E. Nicholas: A comparison of the surfactant associated lipids derived from reptilian and mammalian lungs (1989) 75:335

Daristotle, L., A.D. Berssenbrugge and G.E. Bisgard: Hypoxic-hypercapnic ventilatory interaction at the carotid body of awake goats (1987) 70:63

Daristotle, L., *see* Bisgard, G.E. (1986) 65:113

Daristotle, L., *see* Bisgard, G.E. (1987) 69:245

Das, A., *see* Shams, H. (1989) 75:39

Daubenspeck, J.A. and D. Bartlett, Jr.: Expiratory pattern and laryngeal responses to single-breath expiratory resistance loads (1983) 54:307

Daubenspeck, J.A., D. Pichon, K.V. Knuth, D. Bartlett, Jr. and W.M. St. John: An inexpensive servo-respirator based upon regulation of a shunt resistance (1988) 73:87

Daubenspeck, J.A., *see* Rist, K.E. (1986) 63:241

Davenport, P.W., A.N. Freed and K.A. Rex: The effect of sulfur dioxide on the response of rabbits to expiratory loads (1984) 56:359

Davidson, A.C. and I.R. Cameron: Ventilatory control in normal man following five minutes' exposure to hypoxia (1985) 60:227

Davidson, J.S.D., *see* Jennings, D.B. (1984) 58:377

Davies, D.G. and J.J. McGrath: Arterial blood gas status in rats exposed to chronic CO at low and high altitude (1989) 75:193

Davies, E.E., *see* Mannix, S.E. (1984) 58:87

Davies, J.G.McF., P.A. Kirkwood, J.R. Romaniuk and T.A. Sears: Effects of sagittal medullary section on high-frequency oscillation in rabbit phrenic neurogram (1986) 64:277

Davis, C. and M.S. Kannan: Sympathetic innervation of human tracheal and bronchial smooth muscle (1987) 68:53

Davis, C., *see* Daniel, E.E. (1986) 63:109

Davis, C., *see* Kannan, M.S. (1988) 74:15

Davis, G.M., M.A. Bureau and Cl. Gaultier: The sustained ventilatory response to hypoxic challenge in the awake newborn piglet with an intact upper airway (1988) 71:307

Davis, P.J., G. Macefield and B.S. Nail: Laryngeal motoneurone activity in the rabbit during asphyxic gasping (1987) 70:327

Davis, P.J., G. Macefield and B.S. Nail: Respiratory muscle activity during asphyxic apnoea and opisthotonus in the rabbit (1986) 65:285

Dawes, G.S., *see* Bamford, O.S. (1986) 66:387

De Alvarez-Buyla, E.R., *see* Alvarez-Buylla, R. (1988) 72:347

De Fur, P.L., *see* Booth, C.E. (1984) 58:359

De Goede, J., *see* Berkenbosch, A. (1984) 55:95

De Goede, J., *see* Schuitmaker, J.J. (1986) 64:69

De Goede, J., *see* Schuitmaker, J.J. (1987) 67:69

De Goede, J., *see* Van Beek, J.H.G.M. (1983) 51:379

De Goede, J., *see* Van Beek, J.H.G.M. (1984) 57:171

De Goede, J., *see* Van Beek, J.H.G.M. (1986) 63:65

De Graaf, P.J.F. and C.M. Ballintijn: Mechanoreceptor activity in the gills of the carp. II. Gill arch proprioceptors (1987) 69:183

De Graaf, P.J.F., C.M. Ballintijn and F.W. Maes: Mechanoreceptor activity in the gills of the carp. I. Gill filament and gill raker mechanoreceptors (1987) 69:173

De Groodt, E.G., P.H. Quanjer, M.E. Wise and B.C. van Zomeren: Changing relationships between stature and lung volumes during puberty (1986) 65:139

De Ribaupierre, Y., *see* Raddatz, E. (1987) 70:1

De Troyer, A. and M. Decramer: Mechanical coupling between the ribs and sternum in the dog (1985) 59:27

De Troyer, A. and V. Ninane: Effect of posture on expiratory muscle use during breathing in the dog (1987) 67:311

De Troyer, A., *see* Baer, R.E. (1987) 70:359

De Troyer, A., *see* Estenne, M. (1988) 74:151

De Troyer, A., *see* Farkas, G.A. (1987) 68:301

De Troyer, A., *see* Gilmartin, J.J. (1987) 70:159

De Troyer, A., *see* Ninane, V. (1988) 73:31

De Troyer, A.: Mechanical role of the abdominal muscles in relation to posture (1983) 53:341

De Vera Porcell, L. and J.G. Gonzalez: Effect of body temperature on the ventilation responses in the lizard *Gallotia galloti* (1986) 65:29

Deal, E.C., Jr., *see* Haxhiu, M.A. (1986) 64:351
Decramer, M., *see* De Troyer, A. (1985) 59:27
Deffebach, M.E., *see* Agostoni, P. (1987) 68:257
Deitz, J.L., *see* MacIntyre, N.R. (1986) 63:201
Dejours, P., *see* Ar, A. (1987) 68:377
Dejours, P., *see* Burtin, B. (1986) 65:235
Delpierre, S., *see* Jammes, Y. (1983) 54:41
Delpierre, S., *see* Lama, A. (1988) 74:265
Demedts, M., *see* Teppema, L.J. (1988) 74:373
Demeester, G., *see* Javaheri, S. (1983) 51:31
Dempsey, J.A., *see* Fregosi, R.F. (1986) 65:85
Dempsey, J.A., *see* Olson, E.B., Jr. (1983) 54:79
Dempsey, J.A., *see* Sharratt, M.T. (1987) 70:313
Dempsey, J.A., *see* Smith, C.A. (1983) 54:331
Dempsey, J.A., *see* Wilson, P.A. (1984) 55:103
Denavit-Saubié, M., *see* Morin-Surun, M.-P. (1984) 58:323
Depledge, M.H.: Respiration and lung function in the mouse, *Mus musculus* (with a note on mass exponents and respiratory variables) (1985) 60:83
Derenne, J.-Ph., *see* Whitelaw, W.A. (1988) 72:151
Derenne, J.-Ph., W.A. Whitelaw, J. Couture and J. Milic-Emili: Load compensation during positive pressure breathing in anesthetized man (1986) 65:303
Desmond, K.J., *see* Katsardis, C.V. (1986) 65:257
Desplanches, D., *see* Favier, R.J. (1985) 61:167
Deyst, K.A. and K.F. Liem: The muscular basis of aerial ventilation of the primitive lung of *Amia calva* (1985) 59:213
Dezi, R., *see* Affanni, J.M. (1987) 67:239
Dhand, R., *see* Shimura (1985) 62:293
Di Prampero, P.E., *see* Samaja, M. (1986) 64:191
Diamond, L., *see* Lai, Y.-L. (1986) 66:147
Dick, T.E., P.L. Parmeggiani and J.M. Orem: Intercostal muscle activity of the cat in the curled, semiprone sleeping posture (1984) 56:385
Dick, T.E., *see* Van Lunteren, E. (1988) 72:303
Dimarco, A.F., M.S. Dimarco, K.P. Strohl and M.D. Altose: Effects of expiratory threshold loading on thoracoabdominal motion in cats (1984) 57:247
Dimarco, A.F., *see* Altose, M.D. (1986) 66:171
Dimarco, A.F., *see* Wolfson, D.A. (1983) 53:273
Dimarco, M.S., *see* Dimarco, A.F. (1984) 57:247
Doble, E.A., *see* Nattie, E.E. (1984) 56:253
Dobson, G., *see* Boutilier, R.G. (1988) 71:69
Dodd, D., *see* Crawford, A.B.H. (1983) 54:197
Dodd, D.S., *see* Brancatisano, T.P. (1986) 64:177
Dodd, G.A.A. and W.K. Milsom: Effects of H^+ *versus* CO_2 on ventilation in the Pekin duck (1987) 68:189
Dodgson, S.J. and R.A.B. Holland: The reaction kinetics of four sheep haemoglobins with identical αa-chains (1983) 53:31
Doerr, C.E., *see* Miles, D.S. (1983) 52:349
Doffey, F., *see* Weibel, E.R. (1987) 69:81
Dolan, G.F., *see* Shepard, J.W., Jr. (1983) 52:205
Doll, E.J., *see* Bartlett, D., Jr. (1986) 64:13
Don, H., *see* Baker, D.G. (1988) 73:21
Donaldson, J.T., *see* Lai-Fook, S.J. (1984) 55:223
Donnelly, D.F. and G.G. Haddad: Effect of graded anesthesia on laryngeal-induced central apnea (1986) 66:235
Donnelly, D.F., M.I. Cohen, A.L. Sica and H. Zhang: Responses of early and late onset phrenic motoneurons to lung inflation (1985) 61:69
Donnelly, D.F., *see* Sica, A.L. (1984) 56:339
Donnelly, D.F., *see* Sica, A.L. (1985) 62:153
Donovan, J.C., *see* Steinbrook, R.A. (1984) 56:51
Dorinsky, P.M., R.L. Hamlin, M.E. Whitcomb and J.E. Gadek: Hypoxia results in an increase in total systemic shunt flow in dogs (1985) 62:231
Douglas, N.J., D.P. White, J.V. Weil and C.W. Zwillich: Effect of breathing route on ventilation and ventilatory drive (1983) 51:209
Douse, M.A. and G.S. Mitchell: Temperature effects on CO_2-sensitive intrapulmonary chemoreceptors in the lizard, *Tupinambis nigropunctatus* (1988) 72:327
Downes, H., *see* Hirshman, C.A. (1986) 63:339
Doyle, C., *see* Kumar, A. (1983) 51:195
Doyle, M., *see* Burggren, W. (1986) 66:279
Drazen, J.M., *see* Solway, J. (1985) 60:267
Drazen, J.M., *see* Venugopalan, C.S. (1984) 56:205
Drechsler, D.M. and J.S. Ultman: Cardiogenic mixing in the pulmonary conducting airways of man? (1984) 56:37
Drechsler Parks, D.M., R.W. Larsen and J.S. Ultman: Inert gas mixing in the upper and central airways of man (1985) 62:305
Drinker, P., *see* Solway, J. (1985) 60:267
Duffin, J., *see* Jeyaranjan, R. (1987) 68:203
Dupré, R.K., R.F. Taylor and D.T. Frazier: Status lung compliance during the development of the bullfrog, *Rana calesbeiana* (1985) 59:231
Dupré, R.K., *see* Burggren, W.W. (1987) 70:73

Duron, B., *see* Macron, J.-M. (1985) 59:155
Duron, B., *see* Marlot, D. (1987) 69:321
Dusseau, J.W. and P.M. Hutchins: Hypoxia-induced angiogenesis in chick chorioallantoic membranes: a role for adenosine (1988) 71:33

Easton, P.A., *see* Filuk, R.B. (1988) 74:163
Easton, P.A., *see* Long, G.R. (1989) 75:173
Edwards, W., *see* Rorie, D.K. (1988) 74:211
Effmann, E.L., *see* Jones, J.H. (1985) 59:15
Egberts, J., C. Clark, L. Kodack and G. Brumley: Intrauterine hypercarbia and lamb lung surfactant synthesis (1984) 57:213
Egberts, J., G.C.M. Gorree and D.J. Reyngoud: Inositol affects the intracellular turnover of pulmonary surfactant phospholipids in the rat (1985) 62:281
Egberts, J., *see* Ennema, J.J., 15 (1984) 58:29
Egginton, S., Z. Turek and L.J.C. Hoofd: Differing patterns of capillary distribution in fish and mammalian skeletal muscle (1988) 74:383
Eisenstein, B.L., *see* Cheney, F.W. (1989) 75:11
El-Fassi-Ben Abdallah, R., *see* Ramonatxo, M. (1986) 65:351
El-Manshawi, A., *see* Alves da Silva, G. (1985) 59:379
Eldridge, F.L. and J.P. Kiley: Effects of hyperoxia on medullary ECF pH and respiration in chemodenervated cats (1987) 70:37
Eldridge, F.L., D.E. Millhorn, J.P. Kiley and T.G. Waldrop: Stimulation by central command of locomotion, respiration and circulation during exercise (1985) 59:313
Eldridge, F.L., D.E. Millhorn, T.G. Waldrop and J.P. Kiley: Mechanisms of respiratory effects of methylxanthines (1983) 53:239
Eldridge, F.L., *see* Kiley, J.P. (1984) 58:295
Eldridge, F.L., *see* Kiley, J.P. (1985) 59:117
Eldridge, F.L., *see* Millhorn, D.E. (1983) 51:219
Eldridge, F.L., *see* Millhorn, D.E. (1984) 55:193
Eldridge, F.L., *see* Millhorn, D.E. (1984) 57:331
Eldridge, F.L., *see* Millhorn, D.E. (1985) 62:79
Eldridge, F.L., *see* Waldrop, T.G. (1983) 54:211
Eldridge, J.P., *see* Millhorn, D.E. (1985) 62:79
ElHefnaway, A.M., *see* Chonan, T. (1988) 73:383
Ellis, A., *see* Pendergast, D.R. (1985) 61:317
Elsner, R., *see* Behrisch, H.W. (1984) 55:239
Enema, J.J., D.-J. Reijngoud, Ch.R.H. Wildevuur and J. Egberts: Effects of artificial ventilation on surfactant phospholipid metabolism in rabbits (1984) 58:15
Engel, L.A., *see* Brancatisano, A. (1987) 67:53
Engel, L.A., *see* Brancatisano, T.P. (1986) 64:177
Engel, L.A., *see* Cotton, D.J. (1988) 71:117
Engel, L.A., *see* Crawford, A.B.H. (1983) 54:197
Engel, L.A., *see* Crawford, A.B.H. (1986) 66:11
Engel, L.A., *see* Paiva, M. (1985) 62:257
England, S.J. and H.A.F. Stogryn: Influence of the upper airway on breathing pattern and expiratory time constant in unanesthetized dog pups (1986) 66:181
England, S.J., C. Sullivan, G. Bowes, A. Onayemi and A.C. Bryan: State-related incidence of spontaneous breathing during high frequency ventilation (1985) 60:357
England, S.J., G. Kent and H.A.P. Stogryn: Laryngeal muscle and diaphragmatic activities in conscious dog pups (1985) 60:95
England, S.J., R. Harding, J.R. Stradling and E.A. Phillipson: Laryngeal muscle activities during progressive hypercapnia and hypoxia in awake and sleeping dogs (1986) 66:327
England, S.J., *see* Harding, R. (1986) 66:315
England, S.J., *see* Zamel, D. (1989) 75:19
Engwall, M.J.A., E.H. Vidruk, A.M. Nielsen and G.E. Bisgard: Response of the goat carotid body to acute and prolonged hypercapnia (1988) 74:335
Ennema, J.J., D.-J. Reijngoud, J. Egberts, P.H. Mook and Ch.R.H. Wildevuur: High-frequency oscillation affects surfactant phospholipid metabolism in rabbits (1984) 58:29
Enoch, A.E., *see* Miles, D.S. (1986) 66:135
Epstein, M.A.F., *see* Fletcher, P.R. (1988) 73:133
Epstein, M.A.F.: Some criteria for laminar conditions during HFV (1986) 63:293
Epstein, R.A., *see* Fletcher, P.R. (1986) 63:213
Epstein, R.A., *see* Fletcher, P.R., 125 (1988) 73:133
Espinoza, M., *see* Benavides, C.E. (1989) 75:327
Estavillo, J.A., *see* Fedde, M.R. (1986) 66:109
Estenne, M., V. Ninane and A. De Troyer: Triangularis sterni muscle use during eupnea in humans: effect of posture (1988) 74:151
Evers, J.A.M., *see* Teppema, L.J. (1983) 53:379
Evers, J.A.M., *see* Teppema, L.J. (1984) 58:123
Evers, J.A.M., *see* Teppema, L.J. (1985) 61:301

Faraci, F.M., D.L. Kilgore, Jr., and M.R. Fedde: Blood flow distribution during hypocapnic hypoxia in Pekin ducks and bar-headed geese (1985) 61:21
Faraci, F.M., *see* Kiley, J.P. (1985) 59:105
Faraci, F.M., *see* Kilgore, Jr., D.L. (1985) 62:325

Farber, J.P., *see* Mathew, O.P. (1983) 54:259
Farhi, L.E., *see* Arieli, R. (1985) 60:295
Farhi, L.E., *see* Arieli, R. (1987) 69:237
Farhi, L.E., *see* Boutellier, U. (1985) 62:141
Farhi, L.E., *see* Boutellier, U. (1986) 66:123
Farhi, L.E., *see* Nesarajah, M.S. (1983) 53:161
Farhi, L.E., *see* Scotto, P. (1987) 68:251
Faridy, E.E., Air opening pressure in fetal lungs (1987) 68:293
Faridy, E.E., Air opening pressure in fluid-filled lungs (1987) 68:279
Faridy, E.E. and J.A. Thiiveris: Rate of secretion of lung surfactant before and after birth (1987) 68:269
Faridy, E.E. and S. Bucher: Maternal lung growth in surgically reduced litter size pregnancy (1988) 72:187
Faridy, E.E., M.R. Sanii and J.A. Thliveris: Fetal lung growth: influence of maternal hypoxia and hyperoxia in rats (1988) 73:225
Faridy, E.E., M.R. Sanii and J.A. Thliveris: Fetal lung growth: influence of maternal exposure to cold and exercise in rats (1989) 75:309
Faridy, E.E., M.R. Sanii and J.A. Thliveris: Influence of maternal pneumonectomy on fetal lung growth (1988) 72:195
Faridy, E.E., S. Bucher and M.R. Sanii: Relationship between maternal and fetal lung growth (1988) 72:171
Faridy, E.E.: Instinctive resuscitation of the newborn rat (1983) 51:1
Farkas, G.A. and A. De Troyer: The ventral rib cage muscles in the dog: contractile properties and operating lengths (1987) 68:301
Farkas, G.A., *see* Baer, R.E. (1987) 70:359
Favier, R.J., D. Desplanches, J.M. Pequignot, L. Peyrin and R. Flandrois: Effects of hypoxia on catecholamine and cardiorespiratory responses in exercising dogs (1985) 61:167
Fedde, M.R., R.E. Burger, J. Geiser, R.K. Gratz, J.A. Estavillo and P. Scheid: Effects of altering dead space volume on respiration and air sac gases in geese (1986) 66:109
Fedde, M.R., *see* Faraci, F.M. (1985) 61:21
Fedde, M.R., *see* Kiley, J.P. (1983) 53:355
Fedde, M.R., *see* Kiley, J.P. (1985) 59:105
Fedde, M.R., *see* Kilgore, Jr., D.L. (1985) 62:325
Fedde, M.R., *see* Orr, J.A. (1988) 73:211
Feder, M.E., R.J. Full and J. Piiper: Elimination kinetics of acetylene and Freon 22 in resting and active lungless salamanders (1988) 72:229
Feldman, H.A. and T.A. McMahon: The 3/4 mass exponent for energy metabolism is not a statistical artifact (1983) 52:149
Fencl, V., *see* Steinbrook, R.A. (1984) 56:51
Ferguson, R.E. and R.G. Boutilier: Metabolic energy production during adrenergic pH regulation in red cells of the Atlantic salmon, *Salmo salar* (1988) 74:65
Ferrus, L., D. Commenges, J. Gire and P. Varène: Respiratory loss as a function of ventilatory or environmental factors (1984) 56:11
Fievet, B., G. Claireaux, S. Thomas and R. Motais: Adaptive respiratory responses of trout to acute hypoxia. III. Ion movements and pH changes in the red blood cell (1988) 74:99
Fievet, B., *see* Claireaux, G. (1988) 74:91
Fievet, B., *see* Thomas, S. (1988) 74:77
Filuk, R., *see* Long, G.R. (1989) 75:173
Filuk, R.B., D.J. Berezanski, P.A. Easton and N.R. Anthonisen: High-frequency oscillatory ventilation may increase airway closure (1988) 74:163
Finney, M.J.B., S.D. Anderson and J.L. Black: The effect of non-isotonic solutions on human isolated airway smooth muscle (1987) 69:277
Finucane, K.E., *see* Hillman, D.R. (1983) 54:295
Fisher, J.T., F.B. Sant'Ambrogio and G. Sant'-Ambrogio: Stimulation of tracheal slowly adapting stretch receptors by hypercapnia and hypoxia (1983) 53:325
Fisher, J.T., *see* Mathew, O.P. (1984) 58:41
Fisher, J.T., *see* Matlew, O.P. (1984) 57:113
Fisher, J.T., *see* Sant'Ambrogio, F.B. (1983) 52: 361
Fisher, J.T., *see* Sant'Ambrogio, G. (1983) 54:317
Fisher, J.T., *see* Sant'Ambrogio, G. (1985) 59: 35
Fisher, J.T., *see* Waldron, M.A. (1988) 72:271
Fisher, P., *see* Hornof, W.J. (1988) 72:375
Fitch, N.A., I.A. Johnston and R.E. Wood: Skeletal muscle capillary supply in a fish that lacks respiratory pigments (1984) 57:201
Fitzgerald, R.S., *see* Howell, S. (1985) 62:15
Flandrois, R., *see* Favier, R.J. (1985) 61:167
Fletcher, E.R., *see* Leoppky, J.A. (1983) 51:167
Fletcher, P.R. and R.A. Epstein: Frequency dependence of dead space during high-frequency ventilation in dogs (1986) 63:213

Fletcher, P.R. and R.A. Epstein: Frequency dependence of dead space during high-frequency ventilation in rhesus monkeys (1988) 73:125

Fletcher, P.R., R.A. Epstein and M.A.F. Epstein: Effective dead space of differently shaped airways during high-frequency ventilation of a CO_2-producing lung model (1988) 73:133

Flynn, E.T., *see* Clarke, J.R. (1987) 68:121

Folgering, H.Th., *see* Teppema, L.J. (1983) 53:379

Fordyce, W.E. and R.K. Kanter: Arterial-end tidal P_{CO_2} equilibration in the cat during acute hypercapnia (1988) 73:257

Fordyce, W.E. and R.M. Whetstone: Characteristics of a simple measure of respiratory impedance (1987) 68:145

Fordyce, W.E. and S.M. Tenney: Role of the carotid bodies in ventilatory acclimation to chronic hypoxia by the awake cat (1984) 58:207

Fordyce, W.E., Hypoxic ventilatory control in the awake cat five years after carotid body resection (1987) 69:209

Fordyce, W.E., S.L. Knuth and D. Bartlett, Jr.: Ventilatory responses to low levels of CO_2 inhalation in the cat (1984) 55:81

Fordyce, W.E., *see* Bennett, F.M. (1985) 59:55

Forkert, L. and J.E. Burks: The effect of lung volume on regional gas transport during high frequency oscillations (1984) 58:279

Forkert, L., *see* Moffat, S.L. (1985) 62:1

Forkert, L., *see* Moffat, S.L. (1986) 66:95

Fornaris, M., *see* Jammes, Y. (1986) 63:347

Forster, H.V., *see* Bisgard, G.E. (1986) 65:113

Forster, H.V., *see* Bisgard, G.E. (1987) 69:245

Forster, H.V., *see* Busch, M.A. (1983) 54:353

Fouke, J.M., *see* Hafer, C.E. (1987) 70:13

Fouke, J.M., *see* Strohl, K.P. (1986) 63:161

Foulon, P., *see* Bureau, M.A. (1985) 60:109

Francisco, D.L., *see* Stock, M.K. (1983) 52:1

Frankel, H.M., *see* Johnson, D.C. (1984) 56:301

Franz, G.N., *see* Frazer, D.G. (1985) 61:277

Franz, G.N., *see* Morgan, J.J. (1984) 55:309

Frappell, P.B., *see* Baudinette, R.V. (1988) 72:219

Frazer, D.G., K.C. Weber and G.N. Franz: Evidence of sequential opening and closing of lung units during inflation-deflation of excised rat lungs (1985) 61:277

Frazer, D.G., *see* Morgan, J.J. (1984) 55:309

Frazier, D.T., *see* Dupré, R.K. (1985) 59:231

Frazier, D.T., *see* Muza, S.R. (1983) 52:371

Frazier, D.T., *see* Muza, S.R. (1984) 58:77

Frazier, D.T., *see* Yu, L.K.H. (1984) 57:31

Fredberg, J.J., *see* Butler, J.P. (1988) 72:241

Fredberg, J.J., *see* Wang, N. (1988) 73:111

Freed, A.N., *see* Davenport, P.W. (1984) 56:359

Fregosi, R.F. and J.A. Dempsey: Anesthetic effects on $[H^+]a$ and muscle metabolites at rest and following exercise (1986) 65:85

Fregosi, R.F., M. Sanjak and D.J. Paulson: Endurance training does not affect diaphragm mitochondrial respiration (1987) 67:225

Friedman, M., *see* MacIntyre, N.R. (1986) 63:201

Frisancho, A.R., Origins of differences in hemoglobin concentration between Himalayan and Andean populations (1988) 72:13

Fujimoto, K. and T. Kobayashi: The role of leukotriene B_4 in endotoxin-induced lung injury in unanesthetized sheep (1988) 71:259

Full, R.J., *see* Feder, M.E. (1988) 72:229

Fuller, S.D. and N.E. Robinson: Mechanism of increased collateral airway resistance during inhomogeneous inflation of excised dog lungs (1988) 74:253

Funk, G.D. and W.K. Milsom: Changes in ventilation and breathing pattern produced by changing body temperature and inspired CO_2 concentration in turtles (1987) 67:37

Furilla, R.A. and D. Bartlett, Jr.: Intrapulmonary receptors in the garter snake (*Thamnophis sirtalis*) (1988) 74:311

Gabel, R.A., *see* Steinbrook, R.A. (1984) 56:51

Gadek, J.E., *see* Dorinsky, P.M. (1985) 62:231

Gaillard, R.C., *see* Rochat, T. (1985) 61:85

Galante, R.J., *see* Ogilvie, M.D. (1989) 75:289

Gallagher, C.G. and M. Younes: Closing volume after inspiratory resistive loading to fatigue (1987) 68:137

Gallina, C., *see* Marchal, F. (1988) 73:201

Gallo, L., Jr., *see* Terra-Filho, J. (1987) 70:265

Gandevia, S.C. and B.L. Plassman: Responses in human intercostal and truncal muscles to motor cortical and spinal stimulation (1988) 73:329

Gandevia, S.C., D.K. McKenzie and I.R. Neering: Endurance properties of respiratory and limb muscles (1983) 53:47

Gandevia, S.C., *see* McKenzie, D. (1987) 67:171

Gang, S., *see* Lei, L. (1989) 75:65

Gannon, B.J., *see* Baudinette, R.V. (1988) 72:219

Gans, C. and R. Pyles: Narial closure in toads; which muscles? (1983) 53:215
Garcia Samartino, L., *see* Affanni, J.M. (1987) 67:239
Garnier, L., *see* Albano, J.-P. (1983) 51:229
Gaudy, J.H., *see* Gautier, H. (1986) 64:329
Gaudy, J.H., *see* Gautier, H. (1986) 65:181
Gaultier, C., A. Harfe, A.M. Lorino and G. Atlan: Lung mechanics in growing guinea pigs (1984) 56:217
Gaultier, C. and R. Zinman: Maximal static pressures in healthy children (1983) 51:45
Gaultier, C., *see* Boule, M. (1989) 75:225
Gaultier, C., *see* Zinman, R. (1984) 55:39
Gaultier, C., *see* Zinman, R. (1986) 64:229
Gaultier, Cl., *see* Davis, G.M. (1988) 71:307
Gaunt, A.S., *see* Prange, H.D. (1985) 62:95
Gaunt, S.L.L., *see* Prange, H.D. (1985) 62:95
Gauthier, P. and R. Monteau: Respiratory resetting induced by activation of inspiratory bulbo-spinal neurones (1986) 65:155
Gauthier, P., G. Hilaire and R. Monteau: Onset and control of expiratory laryngeal discharge: Cross-correlation analysis (1983) 54:67
Gauthier, P., *see* Hilaire, G. (1983) 51:341
Gautier, H. and J.H. Gaudy: Ventilatory recovery from hypothermia in anesthetized cats (1986) 64:329
Gautier, H., M. Bonora and J.H. Gaudy: Ventilatory response of the conscious or anesthetized cat to oxygen breathing (1986) 65:181
Gautier, H., *see* Bonora, M. (1988) 71:11
Gautier, H., *see* Parot, S. (1984) 58:253
Gautier, H.: Effects of chronic administration of phenobarbital in low doses on control of breathing in the cat (1986) 64:307
Gavriely, N., *see* Arieli, R. (1988) 71:247
Gavriely, N., *see* Oliven, A. (1989) 75:29
Gavriely, N., *see* Solway, J. (1985) 60:267
Gehr, P., *see* Weibel, E.R. (1983) 54:173
Gehr, P., *see* Weibel, E.R. (1987) 69:81
Gehr, P., *see* Zeltner, T.B. (1987) 67:247
Geiser, J., H. Schibli and P. Haab: Stimultaneous O_2 and CO diffusing capacity estimates from assumed lognormal $\dot{V}_A$, $\dot{Q}$ and DL distributions (1983) 52:53
Geiser, J., R.K. Gratz, T. Hiramoto and P. Scheid: Effects of increasing metabolism by 2,4-dinitrophenol on respiration and pulmonary gas exchange in the duck (1984) 57:1
Geiser, J., *see* Fedde, M.R. (1986) 66:109
Geubelle, F., *see* Kraemer, R. (1983) 52:229
Gibson, C.G., *see* Winslow, R.M. (1985) 61:197
Gilbert, D.L.: The first documented description of mountain sickness: The Andean or Pariacaca story (1983) 52:327
Gilbert, D.L.: The first documented report of mountain sickness: The China or Headache Mountain story (1983) 52:315
Gillespie, J.R., *see* Watson, J.W. (1984) 58:235
Gillespie, J.R., *see* Wegner, C.D. (1984) 55:47
Gilmartin, J.J., *see* Ninane, V. (1988) 73:31
Gilmartin, J.J., V. Ninane and A. De Troyer: Abdominal muscle use during breathing in the anesthetized dog (1987) 70:159
Girard, F., J. Kister, B. Bohn, and C. Poyart: Functional properties of hemoglobin in human red cells. I. Oxygen equilibrium curves and DPG binding (1987) 68:227
Girard, F., *see* Boule, M. (1989) 75:225
Girard, H., *see* Ar, A. (1987) 68:377
Girard, H., *see* Handrich, Y. (1985) 60:237
Girard, P., J. Polianski, M. Brun-Pascaud, P. Jelazko, D. Henzel and J.J. Pocidalo: Ventilatory adaptation to metabolic alkalosis in adult awake potassium restricted rats (1984) 57:23
Gire, J., *see* Ferrus, L. (1984) 56:11
Glahn, J., *see* Yamaguchi, K. (1987) 67:209
Glass, M.L., *see* Kruhøffer, M. (1987) 69:267
Glass, M.L., *see* Yamaguchi, K. (1989) 75:371
Gleeson, M., *see* Barnas, G.M. (1986) 66:293
Gleeson, M., *see* Brackenbury, J.H. (1983) 54:109
Gleeson, M.: Effects of changes in tidal volume on avian intrapulmonary chemoreceptor discharge (1985) 61:95
Gleeson, T.T., *see* Mitchell, G.S. (1985) 60:253
Gleisner, J.M. and C.J. Martin: Lung tissue tension and glycosaminoglycans (1986) 66: 247
Goetz, K.-H., *see* Albers, C. (1983) 54:145
Goetz, K.G., *see* Albers, C. (1985) 61:209
Goncette, L., *see* Rodenstein, D.O. (1983) 52:217
Gonzalez, J.G., *see* De Vera Porcell, L. (1986) 65:29
Gonzalez, N.C. and R.L. Clancy: Acid-base regulation in prolonged hypoxia: effect of increased P_{CO_2} (1986) 64:213
Gonzalez, N.C. and R.L. Clancy: Catecholamine effect on HCO_3^-/Cl^- exchange and rabbit myocardial cell pH regulation (1984) 56:289
Gonzalez, N.C. and R.L. Clancy: Intracellular pH regulation during prolonged hypoxia in rats (1986) 65:331

Gonzalez, N.C., *see* Widener, G. (1986) 65:341
Goode, R., *see* Jeyaranjan, R. (1987) 68:203
Gordon, C.J. and J.S. Ali: Measurement of ventilatory frequency in unrestrained rodents using microwave radiation (1984) 56:73
Gordon, C.J. and M.D. Long: Ventilatory frequency of mouse and hamster during microwave-induced heat exposure (1984) 56:81
Gorree, G.C.M., *see* Egberts, J. (1985) 62:281
Gotshall, R.W., *see* Miles, D.S. (1983) 52:349
Gottfried, S.B., *see* Strohl, K.P. (1986) 63:161
Gottlieb, S., *see* Mayers, I. (1987) 69:149
Graham, B.L., *see* Cotton, D.J. (1983) 54:19
Grassi, B., *see* Cerretelli, P. (1988) 74:355
Grassino, A., *see* Road, J.D. (1986) 65:39
Gratz, R.K., *see* Fedde, M.R. (1986) 66:109
Gratz, R.K., *see* Geiser, J. (1984) 57:1
Gray, A.T., *see* Hempleman, S.C. (1988) 73:279
Green, J., S.T. Chiang, W.F. Wang, Y.J. Yang and Y.C. Kao: Volume and pressure during transient added resistance (1988) 74:239
Green, J.F., *see* Adams (1987) 70:343
Green, J.F., *see* Schneider, D.A. (1987) 67:347
Greers, C. and G. Gros: Inhibition properties and inhibition kinetics of an extracellular carbonic anhydrase in perfused skeletal muscle (1984) 56:269
Gregory, T.J., *see* Chapleau, M.W. (1988) 71: 185
Grevey, S.C., *see* Miles, D.S. (1986) 66:135
Grieshaber, M.K., *see* Bridges, C.R. (1984) 57: 189
Grieshaber, M.K., *see* Pelster, B. (1988) 71:355
Grieshaber, M.K., *see* Pörtner, H.O. (1985) 59:361
Grimaud, Ch., *see* Jammes, Y. (1986) 63:347
Grimaud, Ch., *see* Jammes, Y. (1987) 67:379
Gromysz, H. and W.A. Karczewski: The split-respiratory centre in the cat: Responses to hypercapnia (1984) 57:225
Grønlund, J.: Errors due to tissue CO_2 capacity in estimation of pulmonary blood flow from single-breath gas analysis (1983) 54:381
Gros, G., *see* Greers, C. (1984) 56:269
Grossmann, G., *see* Robertson, B. (1985) 61:265
Grover, R.F., *see* Huang, S.Y. (1984) 57:377
Grover, R.F., *see* Tucker, A. (1983) 54:363
Grubb, B., *see* Jones, J.H. (1983) 54:189
Guatier, H., *see* Bonora, M. (1987) 68:359
Guenard, H., A.M. Cros and C. Boudey: Variation in flow and intraalveolar pressure during jet ventilation: theoretical and experimental analysis (1989) 75:235
Guenard, H., N. Varene and P. Vaida: Determination of lung capillary blood volume and membrane diffusing capacity in man by the measurements of NO and CO transfer (1987) 70:113
Guenard, H., *see* Tabka, Z. (1987) 67:115
Guintini, C., *see* Miserocchi, G. (1986) 65:13
Gunther, R.A., *see* Hornof, W.J. (1988) 72:375
Gustin, P., M. Bakima, P. Lekeux, F. Lomba and K.P. Van de Woestijne: Partitioning of upper airway resistance in Friesian and double-muscled calves (1987) 69:299
Gutierrez, G.: The rate of oxygen release and its effect on capillary O_2 tension: A mathematical analysis (1986) 63:79
Guz, A., *see* Benchetrit, G. (1989) 75:199
Guz, A., *see* Hamilton, R.D. (1987) 67:159
Guz, A., *see* Hamilton, R.D. (1988) 73:145
Guz, A., *see* Shea, S.A. (1987) 68:331
Guz, A., *see* Shea, S.A. (1987) 68:345
Guz, A., *see* Shea, S.A. (1988) 72:131
Guz, A., *see* Shea, S.A. (1989) 75:211

Haab, P., *see* Geiser, J. (1983) 52:53
Haab, P., *see* Werlen, C. (1984) 55:205
Haddad, G.G. and P.A. Lasala: Effect of parasympathetic blockade on ventilatory and cardiac depression induced by opioids (1987) 67:101
Haddad, G.G., *see* Donnelly, D.F. (1986) 66:235
Hafer, C.E., K.P. Strohl and J.M. Fouke: Phasic changes in upper airway impedance (1987) 70:13
Hajduczok, G., *see* Krasney, J.A. (1985) 59:197
Hakim, T.S. and A.B. Malik: Hypoxic vasoconstriction in blood and plasma perfused lungs (1988) 72:109
Hakim, T.S. and A.S. Macek: Role of erythrocyte deformability in the acute hypoxic pressor in the pulmonary vasculature (1988) 72:95
Hakim, T.S., H.K. Chang and R.P. Michel: The rectilinear pressure-flow relationship in the pulmonary vasculature: zones 2 and 3 (1985) 61:115
Hakim, T.S., *see* Van der Zee, H. (1986) 64:125
Hallemans, R., *see* Mélot, C. (1987) 68:11
Hamilton, R.D., A.J. Winning and A. Guz: Blockade of 'alveolar' and airway reflexes by local anesthetic aerosol in dogs (1987) 67: 159

Hamilton, R.D., A.J. Winning, R.L. Horner and A. Guz: The effect of lung inflation on breathing in man during wakefulness and sleep (1988) 73:145

Hamilton, R.D., *see* Shea, S.A. (1989) 75:211

Hamlin, R.L., *see* Dorinsky, P.M. (1985) 62:231

Hammond, M.D. and S.C. Hempleman: Oxygen diffusing capacity estimates derived from measured V_A/Q distributions in man (1987) 69:129

Hampson, N.B., F.F. Jobsis-VanderVliet and C.A. Piantadosi: Skeletal muscle oxygen availability during respiratory acid-base disturbances in cats (1987) 70:143

Handrich, Y. and H. Girard: Gas diffusive conductance of sea-level hen eggs incubated at 2900 m altitude (1985) 60:237

Haneda, T., *see* Ohe, M. (1986) 63:177

Hanson, M.A., *see* Bamford, O.S. (1986) 66:387

Hanson, M.A., *see* Nye, P.C.G. (1983) 51:109

Haouzi, P., *see* Marchal, F. (1988) 73:201

Hardin, R., *see* Wood, G.A. (1989) 75:89

Harding, R., J.A. Buttress, D.J. Caddy and G.A. Wood: Respiratory and upper airway responses to nasal obstruction in wake lambs and ewes (1987) 68:177

Harding, R., J.N. Sigger, P.J.D. Wickham and A.D. Bocking: The regulation of flow of pulmonary fluid in fetal sheep (1984) 57:47

Harding, R., S.J. England, J.R. Stradling, K.F. Kozar and E.A. Phillipson: Respiratory activity of laryngeal muscles in awake and sleeping dogs (1986) 66:315

Harding, R., *see* England, S.J. (1986) 66:327

Haresnape, A. McD., E.A. Harris and P. McN. Hill: Taylor laminar dispersion in human airways (1985) 59:131

Harf, A., R. Le Gall and H.K. Chang: Mechanical ventilation with super-imposed high frequency oscillation in the normal rat (1983) 54:31

Harf, A., *see* Chang, H.K. (1984) 57:135

Harf, A., *see* Lorino, A.M. (1988) 73:155

Harfe, A., *see* Gaultier, C. (1984) 56:217

Harris, E.A., *see* Haresnape, A. McD. (1985) 59:131

Hart, M.V., *see* Hohimer, A.R. (1985) 61:383

Hart, M.V., *see* Hosenpud, J.D. (1983) 52:259

Hastings, R.H. and F.L. Powell: Single breath CO_2 measurements of deadspace in ducks (1986) 63:139

Haxhiu, M.A., E. van Lunteren, J. Mitra, N.S. Cherniack and K.P. Strohl: Comparison of the responses of the diaphragm and upper airway muscles to central stimulation of the sciatic nerve (1984) 58:65

Haxhiu, M.A., E. Van Lunteren, J. Mitra and N.S. Cherniack: Comparison of the response of diaphragm and upper airway dilating muscle activity in sleeping cats (1987) 70:183

Haxhiu, M.A., E. Van Lunteren, W.B. van de Graaff, K.P. Strohl, E.N. Bruce, J. Mitra and N.S. Cherniack: Action of nicotine on the respiratory activity of the diaphragm and genioglossus muscles and the nerves that innervate them (1984) 57:153

Haxhiu, M.A., E.C. Deal, Jr., M.P. Norcia, E. van Lunteren, J. Mitra and N.S. Cherniack: Medullary effects of nicotine and GABA on tracheal smooth muscle tone (1986) 64:351

Haxhiu, M.A., *see* Chandler Deal, E., Jr. (1987) 69:335

Haxhiu, M.A., *see* Mitra, J. (1985) 60:377

Haxhiu, M.A., *see* Van Lunteren, E. (1986) 63: 361

Haxhiu, M.A., *see* Van Lunteren, E. (1988) 72: 303

Haynes, M.S., *see* Cassidy, S.S. (1986) 66:269

Heath, M.E., *see* Weber, R.E. (1986) 64:103

Heaton, R., *see* Shea, S.A. (1988) 72:131

Heigenhauser, G.J.F., N.B. Oldridge and N.L. Jones: The CO_2 responsiveness and ventilatory response to leg and arm exercise in female swimmers (1983) 53:263

Heigenhauser, G.J.F., *see* Alves da Silva, G. (1985) 59:379

Heisler, N., D.P. Toews and G.F. Holeton: Regulation of ventilation and acid-base status in the elasmobranch *Scyliorhinus stellaris* during hyperoxia-induced hypercapnia (1988) 71:227

Heisler, N., *see* Holeton, G.F. (1983) 51:303

Heisler, N., *see* Ishimatsu, A. (1988) 71:83

Heisler, N., *see* Jackson, D.C. (1983) 53:187

Heisler, N., *see* Marconi, C. (1988) 74:1

Heisler, N., *see* Pörtner, H.O. (1985) 59:361

Heming, T.A., D.J. Randall, R.G. Boutilier, G.K. Iwama and D. Primmett: Ionic equilibria in red blood cells of rainbow trout (*Salmo gairdneri*): Cl^-, HCO_3^- and H^+ (1986) 65:223

Heming, T.A., *see* Boutillier, R.G. (1985) 61:237

Hempleman, S.C. and A.T. Gray: Estimating steady-state $D_{L_{O_2}}$ with nonlinear dissociation curves and $\dot{V}_A/\dot{Q}$ inequality (1988) 73:279

Hempleman, S.C. and F.L. Powell: Influence of pulmonary blood flow and O_2 flux on D_{O_2} in avian lungs (1986) 63:285

Hempleman, S.C. and R.E. Burger: Comparison of intrapulmonary chemoreceptor response to P_{CO_2} in the duck and chicken (1985) 61:179

Hempleman, S.C. and R.E. Burger: Receptive fields of intrapulmonary chemoreceptors in the Pekin duck (1984) 57:317

Hempleman, S.C., *see* Barnas, G.M. (1983) 54:233

Hempleman, S.C., *see* Hammond, M.D. (1987) 69:129

Hempleman, S.C., T.P. Adamson and R.E. Burger: Sensitivity of avian intrapulmonary chemoreceptors to venous CO_2 load (1986) 66:53

Henderson, M.C., *see* Waldrop, T.G. (1986) 64:93

Henderson, M.C., *see* Waldrop, T.G. (1986) 66:215

Henke, K.G., *see* Sharratt, M.T. (1987) 70:313

Henquin, J.C., *see* Kalenga, M. (1987) 68:29

Henzel, D., *see* Girard, P. (1984) 57:23

Herigault, R.A., *see* Soulard, C.D. (1983) 51:21

Herigault, R.A., *see* Teisseire, B.P. (1984) 58:335

Hesser, C.M. and F. Lind: Ventilatory and occlusion-pressure responses to incremental-load exercise (1983) 51:391

Hicks, J.W., *see* Ishimatsu, A. (1988) 71:83

Hilaire, G., P. Gauthier and R. Monteau: Central respiratory drive and recruitment order of phrenic and inspiratory laryngeal motoneurones (1983) 51:341

Hilaire, G., *see* Gauthier, P. (1983) 54:67

Hill, A.R., D.L. Kaiser, J.-Y. Lu and D.F. Rochester: Steady-state response of conscious man to small expiratory resistive loads (1985) 61:369

Hill, E.P., *see* Willford, D.C. (1986) 64:113

Hill, N.S. and L.C. Ou: The role of pulmonary vascular responses to chronic hypoxia in the development of chronic mountain sickness in rats (1984) 58:171

Hill, N.S., G.L. Sardella and L.C. Ou: Reticulocytosis, increased mean red cell volume, and greater blood viscosity in altitude susceptible compared to altitude resistant rats (1987) 70:229

Hill, N.S., L.C. Ou, C.D. Thron and R.P. Smith: Time course of cardiopulmonary responses to high altitude in susceptible and resistant rat strains (1987) 70:241

Hill, N.S., *see* Ou, L.C. (1984) 58:161

Hill, N.S., *see* Ou, L.C. (1986) 64:81

Hill, P. McN., *see* Haresnape, A. McD. (1985) 59:131

Hillman, D.R. and K.E. Finucane: The effect of hyperinflation on lung elasticity in healthy subjects (1983) 54:295

Hills, B.A., *see* Barrow, R.E. (1983) 51:79

Hilton, S.M., *see* Chiocchio, S.R. (1984) 57:235

Hiramoto, T., *see* Geiser, J. (1984) 57:1

Hiramoto, T., *see* Nakanishi, S. (1988) 74:139

Hirshman, C.A. and H. Downes: Airway responses to methacholine and histamine in basenji greyhounds and other purebred dogs (1986) 63:339

Hlastala, M.P., *see* Bridges, C.R. (1983) 51:275

Hlastala, M.P., *see* Malvin, G.M. (1986) 65:99

Hlastala, M.P., *see* Petrini, M.F. (1983) 54:121

Hlastala, M.P., T.A. Standaert, D.J. Pierson and D.L. Luchtel: The matching of ventilation and perfusion in the lung of the Tegu lizard, *Tupinambis nigropunctatus* (1985) 60:277

Hōbe, H., C.M. Wood and M.G. Wheatly: The mechanisms of acid-base and ionoregulation in the freshwater rainbow trout during environmental hyperoxia and subsequent normoxia. I. Extra- and intracellular acid-base status (1984) 55:139

Hōbe, H., *see* Wheatly, M.G. (1984) 55:155

Hōbe, H., *see* Wood, C.M. (1984) 55:175

Hochachka, P.W., C. Stanley, J. Merkt and J. Sumar-Kalinowski: Metabolic meaning of elevated levels of oxidative enzymes in high altitude adapted animals: An interpretive hypothesis (1983) 52:303

Hodson, W.A., *see* Jackson, J.C. (1988) 73:291

Hoeger, U., *see* Boutilier, R.G. (1988) 71:69

Hohimer, A.R., J.M. Bissonette, C.M. Machida and B. Horowitz: The effect of carbonic anhydrase inhibition on breathing movements and electrocortical activity in fetal sheep (1985) 61:327

Hohimer, A.R., J.M. Bissonnette, B.S. Richardson and C.M. Machida: Central chemical regulation of breathing movements in fetal lambs (1983) 52:99

Hohimer, A.R., M.V. Hart and J.A. Resko: The effect of castration and sex steroids on ventilatory control in male guinea pigs (1985) 61:383

Hohimer, A.R., *see* Hosenpud, J.D. (1983) 52:259

Holeton, G F., *see* Heisler, N. (1988) 71:227

Holeton, G.F., P. Neumann and N. Heisler: Branchial ion exchange and acid base regulation after strenuous exercise in rainbow trout (*Salmo gairdneri*) (1983) 51:303

Holland, R.A.B., A.F. Rimes, A. Comis and C.H. Tyndale-Biscoe: Oxygen carriage and carbonic anhydrase activity in the blood of a marsupial, the Tammar Wallaby (*Macropus eugenii*), during early development (1988) 73:69

Holland, R.A.B., H. Shibata, P. Scheid and J. Piiper: Kinetics of O_2 uptake and release by red cells in stopped-flow apparatus: Effects of unstirred layer (1985) 59:71

Holland, R.A.B., *see* Dodgson, S.J. (1983) 53: 31

Holmes, R., *see* Schroter, R.C. (1987) 70:97

Homer, L.D., *see* Clarke, J.R. (1987) 68:121

Honer, W.G. and D.B. Jennings: P_{CO_2} modulation of ventilation and HCO_3^- buffer during chronic metabolic acidosis (1983) 54:241

Hoofd, L.J.C., *see* Egginton, S. (1988) 74:383

Hook, C., K. Yamaguchi, P. Scheid and J. Piiper: Oxygen transfer of red blood cells: experimental data and model analysis (1988) 72:65

Hook, C., *see* Meyer, M. (1986) 63:307

Hook, C., *see* Rieke, H. (1983) 54:1

Hook, C., *see* Scheid, P. (1986) 64:365

Hoppeler, H., *see* Conley, K.E. (1985) 62:273

Hoppeler, H., *see* Conley, K.E. (1987) 69:47

Hoppeler, H., *see* Hudlicka, O. (1988) 72:1

Hoppeler, H., *see* Karas, R.H. (1987) 69:65

Hoppeler, H., *see* Kayar, S.R. (1986) 64:1

Hoppeler, H., *see* Taylor, C.R., 7 (1987) 69:117

Hoppeler, H., *see* Weibel, E.R. (1983) 54:173

Hoppeler, H., *see* Weibel, E.R. (1987) 69:1

Hoppler, H., S.R. Kayar, H. Claassen, E. Uhlmann and R.H. Karas: Adaptive variation in the mammalian respiratory system in relation to energetic demand: III. Skeletal muscles: setting the demand for oxygen (1987) 69:27

Horimoto, M., *see* Koyama, T. (1983) 52:181

Horne, R., *see* Berger, P.J. (1986) 65:55

Horner, R.L., *see* Hamilton, R.D. (1988) 73:145

Horner, R.L., *see* Shea, S.A. (1988) 72:131

Hornof, W.J., M.W. O'Callaghan, R.A. Gunther, R. Howard, P. Fisher, O. Raabe and C.E. Cross: Lung clearance of ^{99m}Tc-DTPA aerosol in conscious sheep (1988) 72:375

Horowitz, B., *see* Hohimer, A.R. (1985) 61:327

Horsfield, K. and M.J. Woldenberg: Branching ratio and growth of tree-like structures (1986) 63:97

Horsfield, K. and M.J. Woldenberg: Comparison of vertex analysis and branching ratio in the study of trees (1986) 65:245

Horsfield, K.: Axial pathways compared with complete data in morphological studies of the lung (1984) 55:317

Hosenpud, J.D., M.V. Hart, M.J. Morton, A.R. Hohimer and J.A. Resko: Progesterone-induced hyperventilation in the guinea pig (1983) 52:259

Howard, R., *see* Hornof, W.J. (1988) 72:375

Howell, S., R.S. Fitzgerald and Ch. Roussos: Effects of neostigmine and salbutamol on diaphragmatic fatigue (1985) 62:15

Huang, S.-Y., *see* Moore, L.G. (1987) 70:195

Huang, S.Y., J.K. Alexander, R.F. Grover, J.T. Maher, R.E. McCullough, R.G. McCullough, L.G. Moore, J.V. Weil, J.B. Sampson and J.T. Reeves: Increased metabolism contributes to increased resting ventilation at high altitude (1984) 57:377

Huang, S.Y., R.E. McCullough, R.G. McCullough, A.J. Micco, M. Manco-Johnson, J.V. Weil and J.T. Reeves: Usual clinical dose of acetazolamide does not alter cerebral blood flow velocity (1988) 72:315

Hudgel, D.W., N.A. Kressin, A.M. Nielsen and G.E. Bisgard: Role of beta adrenergic receptors in carotid body function of the goat (1986) 64:202

Hudlicka, O., A.J.A. Wright, H. Hoppeler and E. Uhlmann: The effect of chronic bradycardial pacing on the oxidative capacity in rabbit hearts (1988) 72:1

Hughes, G.M., *see* Albers, C. (1983) 52:165

Hughes, G.M., *see* Albers, C. (1983) 54:145

Hughes, J.M.B., *see* Amis, T.C., 145 (1984) 56:169

Hughes, J.M.B., *see* Mannix, D.E. (1984) 58:87

Hughes, J.M.B., *see* Maxwell, D.L. (1985) 61:255

Hughes, J.M.B., *see* Maxwell, D.L. (1988) 74:275

Hughson, R.L. and M.D. Inman: Gas exchange analysis of immediate CO_2 storage at onset of exercise (1985) 59:265

Hwang, J.-C., W.M. St. John and D. Bartlett, Jr.: Receptors responding to changes in upper airway pressure (1984) 55:355
Hwang, J.-C., W.M. St. John and D. Bartlett, Jr.: Afferent pathways for hypoglossal and phrenic responses to changes in upper airway pressure (1984) 55:341
Hwang, J.-C. and W.M. St. John: Respiratory-modulated activities of motor units of the facial nerve (1988) 73:189
Hwang, J.-C., C.-T. Chien and W.M. St. John: Characterization of respiratory-related activity of the facial nerve (1988) 73:175

Ianuzzo, C.D., *see* Blank, S. (1988) 74:115
Iber, C. and C. McArthur: Awake inspiratory airway occlusion in normal humans is followed by hypernea and hypocapnia (1989) 75:349
Ichinose, Y., *see* Scotto, P. (1987) 68:1
Ikegami, M., *see* Robertson, R. (1985) 61:265
Ingermann, R.L., M.K. Stock, J. Metcalfe and T.-B. Shih: Effect of ambient oxygen on organic phosphate concentrations in erythrocytes of the chick embryo (1983) 51:141
Inman, M.D., *see* Highson, R.L. (1985) 59:265
Inoue, H., *see* Sasaki, H. (1984) 56:21
Ishii, K. and K. Ishii: Glossopharyngeal innervation of chemo- and baroreceptors in the dorsal carotid artery of the tortoise *Testudio hermanni* (1986) 65:295
Ishii, K., K. Ishii and T. Kusakabe: Chemo- and baroreceptor innervation of the aortic trunk of the toad *Bufo vulgaris* (1985) 60:365
Ishii, K., K. Ishii and T. Kusakabe: Electrophysical aspects of reflexogenic area in the chelonian, *Geoclemmys reevesii* (1985) 59:45
Ishii, K., *see* Ishii, K. (1986) 65:295
Ishimatsu, A., J.W. Hicks and N. Heisler: Analysis of intracardiac shunting in the lizard, *Varanus niloticus*:a new model based on blood oxygen levels and microsphere distribution (1988) 71:83
Issa, F.G., *see* McNamara, S.G. (1986) 65:315
Ito, M., K. Baba, K. Takagi, T. Satake and T. Tomita: Some properties of calcium-induced contraction in the isolated human and guinea-pig tracheal smooth muscle (1985) 59:143
Ito, M., K. Baba, K. Takagi, T. Satake and T. Tomita: Effects of high K on relaxation produced by drugs in the guinea-pig tracheal muscle (1985) 61:43
Iwama, G.K., *see* Boutillier, R.G. (1985) 61:237
Iwama, G.K., *see* Heming, T.A. (1986) 65:223
Iwamoto, G.A., *see* Waldrop, T.G. (1986) 64:93

Jackson, A.C., *see* Watson, J.W. (1984) 58:235
Jackson, D.C. and N. Heisler: Intracellular and extracellular acid base and electrolyte status of submerged anoxic turtles at 3°C (1983) 53:187
Jackson, D.C., *see* Wasser, J.S. (1988) 71:213
Jackson, J.C., S. Palmer, C.B. Wilson, T.A. Standaert, W.E. Truog, J.H. Murphy and W.A. Hodson: Postnatal changes in lung phospholipids and alveolar macrophages in term newborn monkeys (1988) 73:291
Jacobs, H., *see* Robertson, B. (1985) 61:265
Jameson, L.C., *see* Smith, C.A. (1983) 54:331
Jammes, Y., B. Nail, N. Mei and Ch. Grimaud: Laryngeal afferents activated by phenyldiguanide and their response to cold air or helium-oxygen (1987) 67:379
Jammes, Y., P. Barthelemy and S. Delpierre: Respiratory effects of cold air breathing in anesthetized cats (1983) 54:41
Jammes, Y., P. Barthelemy, M. Fornaris and Ch. Grimaud: Cold-induced bronchospasm in normal and sensitized rabbits (1986) 63:347
Jammes, Y., *see* Badier, M. (1988) 73:1
Jammes, Y., *see* Barthélemy, P. (1988) 71:1
Jammes, Y., *see* Lama, A. (1988) 74:265
Janczewski, W.A. and W.A. Karczewski: Respiratory effects of pontine, medullary and spinal cord midline sections in the rabbit (1984) 57:293
Javaheri, S., Acetazolamide and cerebrospinal fluid ions in dogs with normal acid-base balance (1987) 69:257
Javaheri, S. and J. Weyne: Effect of amiloride on cisternal fluid [HCO_3^-] in acute respiratory acidosis (1984) 58:101
Javaheri, S. and J. Weyne: Effects of 'DIDS', an anion transport blocker, on CSF [HCO_3^-] in respiratory acidosis (1984) 57:365
Javaheri, S., J. Weyne and G. Demeester: Changes in the brain surface pH and cisternal cerebrospinal fluid acid–base variables in respiratory arrest (1983) 51:31
Javaheri, S., *see* Steinbrook, R.A. (1984) 56:51
Jelazka, P., *see* Girard, P. (1984) 57:23
Jelkmann, W., *see* Roszinski, S. (1987) 70:131
Jelkmann, W.: Erythropoietin research, 80 years after the initial studies by Carnot and Def landre (1986) 63:257

Jennings, D.B. and J.S.D. Davidson: Acid–base and ventilatory adaptation in conscious dogs during chronic hypercapnia (1984) 58:377
Jennings, D.B., *see* Honer, W.G. (1983) 54:241
Jensen, F.B., M. Nikinmaa and R.E. Weber: Effects of exercise stress on acid base balance and respiratory function in blood of the teleost *Tinca tinca* (1983) 51:291
Jeyaranjan, R., R. Goode, S. Beamish and J. Duffin: The contribution of peripheral chemoreceptors to ventilation during heavy exercise (1987) 68:203
Jobe, A., *see* Robertson, B. (1985) 61:265
Jobsis-VanderVliet, F.F., *see* Hampson, N.B. (1987) 70:143
Johansen, K., *see* Bech, C. (1984) 57:103
Johansen, K., *see* Kruhøffer, M. (1987) 69:267
Johansen, K., *see* Thomas, S. (1987) 68:85
Johnson, D.C., H.M. Frankel and H. Kazemi: Effect of furosemide on cerebrospinal fluid composition (1984) 56:301
Johnson, P.R.A., *see* Marthan, R. (1988) 71:157
Johnson, R.R., *see* Tøien, Ø. (1988) 74:345
Johnston, B.M., *see* Martin-Body, R.L. (1988) 71:25
Johnston, I.A., *see* Fitch, N.A. (1984) 57:201
Jones, D.R. and C. Chu: Effect of denervation of carotid labyrinths on breathing in unrestrained *Xenopus laevis* (1988) 73:243
Jones, H.A., *see* Amis, T.C., 145 (1984) 56:169
Jones, J.H., B. Grubb and K. Schmidt-Nielsen: Panting in the emu causes arterial hypoxemia (1983) 54:189
Jones, J.H., E.L. Effmann and K. Schmidt-Nielsen: Lung volume changes during respiration in ducks (1985) 59:15
Jones, J.H., *see* Banzett, R.B. (1987) 70:287
Jones, J.J., *see* Karas, R.H. (1987) 69:101
Jones, N.L., *see* Alves da Silva, G. (1985) 59:379
Jones, N.L., *see* Heigenhauser, G.J.F. (1983) 53:263
Jones, S., *see* Robertson, B. (1985) 61:265
Jonzon, A., T.E. Pisarri, A.M. Roberts, J.C.G. Coleridge and H.M. Coleridge: Attenuation of pulmonary afferent input by vagal cooling in dogs (1988) 72:19
Juarbe, C. and A.H. Sillau: Muscle capillarity in rats with increased blood oxygen affinity (1988) 72:83
Jüch, P.J.W. and C.M. Ballintijn: Tegmental neurons controlling medullary respiratory centre activity in the carp (1983) 51:95
Junod, A.F., *see* Rochat, T. (1985) 61:85
Junod, A.F., *see* Savoy, J. (1984) 56:195
Jürgens, K.D., *see* Rothstein, S. (1984) 57:15

Kaiser, D.L., *see* Hill, A.R. (1985) 61:369
Kakuta, Y., T. Kanno, H. Sasaki and T. Takishima: Effect of Ca^{2+} on the ciliary beat frequency of skinned dog tracheal epithelium (1985) 60:9
Kalenga, M. and J.C. Henquin: Alteration of lung mechanics by protein-calorie malnutrition in weaned rats (1987) 68:29
Kamau, J.M.Z., J.N. Maina and G.M.O. Maloiy: The design and the role of the nasal passages in temperature regulation in the dik-dik antelope (*Rhynchotragus kirkii*) with observations on the carotid rete (1984) 56:183
Kamm, R.D. and R.C. Schroter: Is airway closure caused by a liquid film instability? (1989) 75:141
Kampine, J.P., *see* Coon, R.L. (1984) 58:345
Kannan, M., *see* Daniel, E.E. (1986) 63:109
Kannan, M.S. and C. Davis: Mode of action of calcium antagonists on responses to spasmogens and antigen challenge in human airway smooth muscle (1988) 74:15
Kannan, M.S., *see* Davis, C. (1987) 68:53
Kanno, T., *see* Kakuta, Y. (1985) 60:9
Kanter, R.K., *see* Fordyce, W.E. (1988) 73:257
Kao, Y.C., *see* Green, J. (1988) 74:239
Kaplowitz, M.R., *see* Lai-Fook, S.J. (1984) 57: 61
Karas, R.H., C.R. Taylor, J.J. Jones, S.L. Lindstedt, R.B. Reeves and E.R. Weibel: Adaptive variation in the mammalian respiratory system in relation to energetic demand: VII. Flow of oxygen across the pulmonary gas exchanger (1987) 69:101
Karas, R.H., C.R. Taylor, K. Rösler and H. Hoppeler: Adaptive variation in the mammalian respiratory system in relation to energetic demand: V. Limits to oxygen transport by the circulation (1987) 69:65
Karas, R.H., *see* Hoppler, H. (1987) 69:27
Karas, R.H., *see* Taylor, C.R., 7 (1987) 69:117
Karas, R.H., *see* Weibel, E.R. (1987) 69:1
Karczewski, W.A., *see* Gromysz, H. (1984) 57:225
Karczewski, W.A., *see* Janczewski, W.A. (1984) 57:293
Katsardis, C.V., K.J. Desmond and A.L. Coates: Measuring the oxygen cost of breathing in normal adults and patients with cystic fibrosis (1986) 65:257

Kaufman, M.P. and K.J. Rybicki: Muscular contraction reflexly relaxes tracheal smooth muscle in dogs (1984) 56:61
Kaufman, M.P., *see* Rybicki, K.J. (1985) 59:185
Kaufman, M.P., *see* Waldrop, T.G. (1984) 58:187
Kayar, S.R. and N. Banchero: Volume density and distribution of mitochondria in myocardial growth and hypertrophy (1987) 70:275
Kayar, S.R. and N. Banchero: Volume overload hypertrophy elicited by cold and its effects on myocardial capillarity (1985) 59:1
Kayar, S.R., H. Claassen, H. Hoppeler and E.R. Weibel: Mitochondrial distribution in relation to changes in muscle metabolism in rat soleus (1986) 64:1
Kayar, S.R., *see* Banchero, N. (1985) 62:245
Kayar, S.R., *see* Conley, K.E. (1987) 69:47
Kayar, S.R., *see* Hoppler, H. (1987) 69:27
Kayar, S.R., *see* Snyder, G.K. (1984) 58:151
Kaye, M.P., *see* Rorie, D.K. (1988) 74:211
Kays, C., *see* Choukroun, M.-L. (1989) 75:255
Kazemi, H., *see* Johnson, D.C. (1984) 56:301
Kelley, M.A., M.D. Laufe, R.P. Millman and D.D. Peterson: Ventilatory response to hypercapnia before and after athletic training (1984) 55:393
Kelly, S., *see* King, M. (1985) 62:47
Kelly, S.M., *see* Brancatisano, A. (1987) 67:53
Kelsen, S.G., *see* Oliven, A. (1988) 73:313
Kent, G., *see* England, S.J. (1985) 60:95
Kent, R., *see* Band, D.M. (1985) 60:217
Kiley, J.P. and M.R. Fedde: Exercise hyperpnea in the duck without intrapulmonary chemoreceptor involvement (1983) 53:355
Kiley, J.P., F.L. Eldridge and D.E. Millhorn: The effect of hypothermia on central neural control of respiration (1984) 58:295
Kiley, J.P., F.L. Eldridge and D.E. Millhorn: The roles of medullary extracellular and cerebrospinal fluid pH in control of respiration (1985) 59:117
Kiley, J.P., F.M. Faraci and M.R. Fedde: Gas exchange during exercise in hypoxic ducks (1985) 59:105
Kiley, J.P., *see* Eldridge, F.L. (1983) 53:239
Kiley, J.P., *see* Eldridge, F.L. (1985) 59:313
Kiley, J.P., *see* Eldridge, F.L. (1987) 70:37
Kiley, J.P., *see* Millhorn, D.E. (1984) 55:193
Kiley, J.P., *see* Millhorn, D.E. (1984) 57:331
Kiley, J.P., *see* Millhorn, D.E. (1984) 58:51
Kiley, J.P., *see* Millhorn, D.E. (1985) 62:79
Kilgore, D.L., Jr., *see* Faraci, F.M. (1985) 61:21
Kilgore, Jr., D.L., F.M. Faraci and M.R. Fedde: Ventilatory and intrapulmonary chemoreceptor sensitivity to CO_2 in the burrowing owl (1985) 62:325
Killian, K.J., *see* Mahutte, C.K. (1983) 51:131
King, M., S. Kelly and M. Cosio: Alteration of airway reactivity by mucus (1985) 62:47
Kirby, S., *see* Toews, D.P. (1985) 59:225
Kirk, W., *see* Agostoni, P. (1987) 68:257
Kirkwood, P.A., *see* Davies, J.G.McF. (1986) 64:277
Kislyakov, Yu.Ya. and A.V. Kopyltsov: The rate of gas-bubble growth in tissue under decompression. Mathematical modelling (1988) 71:299
Kister, J., M.C. Marden, B. Bohn and C. Poyart: Functional properties of hemoglobin in human red cells: II. Determination of the Bohr effect (1988) 73:367
Kister, J., *see* Girard, F. (1987) 68:227
Klein, J.J., *see* Souhrada, M. (1983) 52:245
Kleinschmidt, T., *see* Weber, R.E. (1987) 69:347
Knudson, D.E., *see* Knudson, R.J. (1983) 52:113
Knudson, R.J. and R.C. Schroter: A consideration of density dependence of maximum expiratory flow (1983) 52:125
Knudson, R.J., R.C. Schroter, D.E. Knudson and S. Sugihara: Influence of airway geometry on expiratory flow limitation and density dependence (1983) 52:113
Knuth, K.V., *see* Daubenspeck, J.A. (1988) 73:87
Knuth, K.V., *see* St. John, W.M. (1984) 56:237
Knuth, S.L., *see* Bartlett, D., Jr. (1984) 58:289
Knuth, S.L., *see* Bartlett, D., Jr. (1987) 70:173
Knuth, S.L., *see* Bonora, M. (1985) 60:181
Knuth, S.L., *see* Fordyce, W.E. (1984) 55:81
Ko, W.-C. and Y.-L. Lai: Cyclic GMP affecting the tracheal nonadrenergic noncholinergic inhibitory system (1988) 73:355
Ko, W.-C. and Y.-L. Lai: The tracheal nonadrenergic inhibitory system during antigen challenge (1988) 74:129
Kobayashi, H., *see* Shams, H. (1989) 75:39
Kobayashi, T., *see* Fujimoto, K. (1988) 71:259
Kobayashi, T., *see* Toyofuku, T. (1987) 68:239
Kochi, T., *see* Bates, J.H.T. (1987) 70:301
Kodack, L., *see* Egberts, J. (1984) 57:213
Kopyltsov, A.V., *see* Kislyakov, Yu.Ya. (1988) 71:299
Koyama, T. and M. Horimoto: Blood flow reduction in local pulmonary microvessels during acute hypoxia imposed on a small fraction of the lung (1983) 52:181

Kozar, L.F., *see* Harding, R. (1986) 66:315
Kraemer, R., G. Wiese, M. Albertini, M. Baghriche and F. Geubelle: Elastic behavior of the lungs in healthy children determined by means of an exponential function (1983) 52:229
Kraemer, R., M. Zehnder and B. Meister: Intrapulmonary gas distribution in healthy children (1986) 65:127
Kraman, S.S., *see* Austrheim, O. (1985) 60:145
Kraman, S.S.: Effects of lung volume and airflow on the frequency spectrum of vesicular lung sounds (1986) 66:1
Krasney, J.A., B.W. McDonald and S. Matalon: Regional circulatory responses to 96 hours of hypoxia in conscious sheep (1984) 57:73
Krasney, J.A., G. Hajduczok, K. Miki and S. Matalon: Peripheral circulatory responses to 96 hours of eucapnic hypoxia in conscious sheep (1985) 59:197
Krasney, J.A., *see* Nesarajah, M.S. (1983) 53:161
Krasney, J.A., *see* Pendergast, D.R. (1985) 61:317
Kressin, N.A., A.M. Nielsen, R. Laravuso and G.E. Bisgard: Domperidone-induced potentiation of ventilatory responses in awake goats (1986) 65:169
Kressin, N.A., *see* Bisgard, G.E. (1987) 69:245
Kressin, N.A., *see* Hudgel, D.W. (1986) 64:202
Kruhøffer, M., M.L. Glass, A.S. Abe and K. Johansen: Control of breathing in an amphibian *Bufo paracnemis*:effects of temperature and hypoxia (1987) 69:267
Kruk, P., *see* Lipski, J. (1984) 57:279
Kubo, K., *see* Toyofuku, T. (1987) 68:239
Kucera, P., *see* Raddatz, E. (1987) 70:1
Kucera, P., *see* Raddatz, E. (1988) 71:133
Kučera, P., *see* Raddatz, E. (1983) 51:153
Kumar, A., B.C. Clutario, C. Doyle and E.M. Scarpelli: Time-dependency and static mechanics of immature airways and saccules (1983) 51:195
Kunz, A.L., *see* Ballam, G.O. (1984) 58:197
Kurer, F.L., *see* Band, D.M. (1985) 60:217
Kusakabe, T., *see* Ishii, K. (1985) 59:45
Kusakabe, T., *see* Ishii, K. (1985) 60:365

La Prairie, A., *see* Mekjavic, I.B. (1987) 70:121
Lagneaux, D.: Ventilatory responses of the rat to mild hypercapnic stimulation before and after almitrine bismesylate (1986) 65:379
Lahiri, S., K. Maret and M.G. Sherpa: Dependence of high altitude sleep apnea on ven tilatory sensitivity to hypoxia (1983) 52:281
Lahiri, S., *see* Andronikou, S. (1988) 72:361
Lahiri, S., *see* Mulligan, E. (1986) 63:375
Lahive, K.C., J.W. Weiss and S.E. Weinberger: Low dose aminophylline selectively increases upper airway motor activity in normals (1988) 72:163
Lai-Fook, S.J. and M.R. Kaplowitz: Alveolar liquid pressure measured using micropipets in isolated rabbit lungs (1984) 57:61
Lai-Fook, S.J., K.C. Beck, A.M. Sutcliffe and J.T. Donaldson: Effect of edema and height on bronchial diameter and shape in excised dog lung (1984) 55:223
Lai, Y.-L. and L. Diamond: Comparison of five methods of analyzing respiratory pressure-volume curves (1986) 66:147
Lai, Y.-L., Calcium dependency of massive *post-mortem* bronchoconstriction in guinea pig lungs (1987) 68:41
Lai, Y.-L., *see* Ko, W.-C. (1988) 73:355
Lai, Y.-L., *see* Ko, W.-C. (1988) 74:129
Lama, A., S. Delpierre and Y. Jammes: The effects of electrical stimulation of myelinated and non-myelinated vagal motor fibres on airway tone in the rabbit and the cat (1988) 74:265
Lamarche, J., *see* Bureau, M.A. (1985) 60:109
Langman, V. *see* Weibel, E.R. (1983) 54:173
Langman, V.A.: Nasal heat exchange in a northern ungulate, the reindeer (*Rangifer tarandus*) (1985) 59:279
Lapennas, G.N. and R.B. Reeves: Oxygen affinity and equilibrium curve shape in blood of chicken embryos (1983) 52:13
Lapennas, G.N. and R.B. Reeves: Oxygen affinity of blood of adult domestic chicken and red jungle fowl (1983) 52:27
Lapennas, G.N., *see* Van Liew, H.D. (1986) 66:355
Lapennas, G.N.: The magnitude of the Bohr coefficient: Optimal for oxygen delivery (1983) 54:161
Laravuso, R., *see* Kressin, N.A. (1986) 65:169
Lasala, P.A., *see* Haddad, G.G. (1987) 67:101
Laufe, M.D., *see* Kelley, M.A. (1984) 55:393
Laurent, D.N., *see* Teisseire, B.P. (1984) 58:335
Lawler, J., *see* Powers, S.K. (1987) 70:251
Lawson, E.E., *see* Long, W.A. (1983) 51:119
Lawson, E.E., *see* McNamara, M.C. (1984) 58:313
Le Gall, R., *see* Harf, A. (1983) 54:31

Le Moigne, J., P. Soulier, M. Peyraud-Waitzenegger and C. Peyraud: Cutaneous and gill O_2 uptake in the European eel (*Anguilla anguilla* L.) in relation to ambient P_{O_2}, 10–400 Torr (1986) 66:341
Leatherman, N., *see* MacIntyre, N.R. (1986) 63:201
Lechermann, B. and W. Jelkmann: Erythropoietin production in normoxic and hypoxic rats with increased blood O_2 affinity (1985) 60:1
Lechner, A.J., *see* Banchero, N. (1985) 62:245
Lechner, A.J.: Pulmonary design in a microchiropteran bat (*Pipistrellus subpavus*) during hibernation (1985) 59:301
Lee, L.-Y., *see* Yu, L.K.H. (1984) 57:31
Lee, L.-Y. and R.F. Morton: Hexamethonium aerosol prevents pulmonary reflexes induced by cigarette smoke in dogs (1986) 66:303
Lee, L.-Y. and R.F. Morton: Reflex bradypnea elicited by cigarette smoke inhaled through an isolated larynx (1988) 73:303
Lee, L.-Y., *see* Muza, S.R. (1984) 58:77
Leeman, M., *see* Baer, R.E. (1987) 70:359
Leffler, C.W., *see* Barnes, S.D. (1983) 53:285
Lehr, J., *see* Banzett, R.B. (1985) 61:57
Lehr, J.L., *see* Banzett, R.B. (1987) 70:287
Lei, L., S. Gang and L. Wei-Yang: Studies on the inspiratory generating effect of the dorsomedical area of nucleus facialis (1989) 75:65
Leiter, J.C. and S.M. Tenney: Hyperoxic ventilatory responses of high altitude acclimatized cats (1986) 65:365
Leiter, J.C., J.P. Mortola and S.M. Tenney: A comparative analysis of contractile characteristics of the diaphragm and of respiratory system mechanics (1986) 64:267
Leith, D.E., *see* Steinbrook, R.A. (1984) 56:51
Leith, D.E., *see* Weibel, E.R. (1983) 54:173
Lejeune, P., *see* Mélot, C. (1987) 68:11
Lekeux, P., *see* Gustin, P. (1987) 69:299
Léon-Velarde, F., *see* Bonavia, D. (1985) 62:125
Levitzky, M.G., *see* Chapleau, M.W. (1988) 71:185
Lichtenbeld, H. and B. Vidic: Effect of maternal exposure to smoke on gas diffusion capacity in neonatal rat (1989) 75:129
Liem, K.F., *see* Deyst, K.A. (1985) 59:213
Lin, J.-S., *see* Saidel (1986) 64:253
Lind, F., *see* Hesser, C.M. (1983) 51:391
Lindborg, B., *see* Mekjavic, I.B. (1987) 70:121
Lindsey, B.C., *see* Shannon, R. (1983) 52:85
Lindsey, B.G., *see* Shannon, R. (1985) 60:193
Lindstedt, S.L., *see* Karas, R.H. (1987) 69:101
Linton, R.A.F. and D.M. Band: The effect of potassium on carotid chemoreceptor activity and ventilation in the cat (1985) 59:65
Linton, R.A.F. and D.M. Band: The relationship between arterial pH and chemoreceptor firing in anaesthetized cats (1988) 74:49
Linton, R.A.F., *see* Band, D.M. (1985) 60:217
Linton, R.A.F., *see* Band, D.M. (1988) 72:295
Linton, R.A.F., *see* Sneyd, J.R. (1988) 72:59
Lipski, J., A. Trzebski, J. Chodobska and P. Kruk: Effects of carotid chemoreceptor excitation on medullary expiratory neurons in cats (1984) 57:279
Llanos, A.J., *see* Benavides, C.E. (1989) 75:327
Loeppky, J.A., P. Scotto and J. Piiper: Transient P_{O_2} and P_{CO_2} differences between end-tidal gas and arterial blood during rebreathing in awake dogs (1985) 60:135
Loeppky, J.A., *see* Scotto, P. (1987) 68:251
Loeppky, J.A., U.C. Luft and E.R. Fletcher: Quantitative description of whole blood CO dissociation curve and Haldane effect (1983) 51:167
Lohda, S., *see* Oliven, A. (1988) 73:313
Lomba, F., *see* Gustin, P. (1987) 69:299
Long, G.R., R. Filuk, M. Balakumar, P.A. Easton and N.R. Anthonisen: Ventilatory response to sustained hypoxia: effect of methysergide and verapamil (1989) 75:173
Long, M.D., *see* Gordon, C.J. (1984) 56:81
Long, R., *see* Mayers, I. (1987) 69:149
Long, W.A. and E.E. Lawson: Developmental aspects of the effect of naloxone on control of breathing in piglets (1983) 51:119
Lorino, A.M., M. Bénichou, I. Macquin-Mavier, H. Lorino and A. Harf: Respiratory mechanics for assessment of histamine bronchopulmonary reactivity in guinea pigs (1988) 73:155
Lorino, A.M., *see* Gaultier, C. (1984) 56:217
Lorino, H., *see* Lorino, A.M. (1988) 73:155
Lu, J.-Y., *see* Hill, A.R. (1985) 61:369
Luchtel, D.L., *see* Hlastala, M.P. (1985) 60:277
Luft, U.C., *see* Loeppky, J.A. (1983) 51:167
Luiten, P.G.M., *see* Ballintijn, C.M. (1983) 51:241
Lundquist, L.J., *see* Weir, E.K. (1983) 53:295
Lykkeboe, G., *see* Tetens, RV (1985) 61:221
Lykkeboe, G., *see* Thomas, S. (1987) 68:85

Macefield, G. and B. Nail: Inspiratory augmentation during asphyxic hyperpnoea and gasping: Proprioceptive influences (1986) 64:57
Macefield, G. and B.S. Nail, Diaphragmatic, thoracic and limb motor effects of amyl nitrite inhalation (1985) 62:181
Macefield, G. and B.S. Nail: Tachypnoeic response to amyl nitrite inhalation in the rabbit (1985) 62:169
Macefield, G., *see* Davis, P.J. (1986) 65:285
Macefield, G., *see* Davis, P.J. (1987) 70:327
Macek, A.S., *see* Hakim, T.S. (1988) 72:95
Machida, C.M., *see* Hohimer, A.R. (1983) 52:99
Machida, C.M., *see* Hohimer, A.R. (1985) 61:327
Maciel, B.C., *see* Terra-Filho, J. (1987) 70:265
Macintosh, B.R., C.V. Peterson, Jr., and A.B. Otis: Effective resistance of the respiratory system studied by a quick release technique (1985) 60:329
Macklem, P.T., *see* Agostoni, E. (1989) 75:105
MacIntyre, N.R., N. Leatherman, J.L. Deitz, R. Wagoner and M. Friedman: Distribution and uptake of helium, carbon monoxide, and acetylene in the lungs during high frequency oscillatory ventilation (1986) 63:201
Macquin-Mavier, I., *see* Lorino, A.M. (1988) 73:155
Macron, J.-M., D. Marlot and B. Duron: Phrenic afferent input to the lateral medullary reticular formation of the cat (1985) 59:155
Macron, J.-M., *see* Marlot, D. (1987) 69:321
Maes, F.W., *see* De Graaf, P.J.F. (1987) 69:173
Maginiss, L.A., S.S. Tapper and L.S. Miller: Effect of chronic cold and submergence on blood oxygen transport in the turtle, *Chrysemys picta* (1983) 53:15
Maginniss, L.A., *see* Bickler, P.E. (1986) 63:151
Maginniss, L.A.: Red cell organic phosphates and Bohr effects in house sparrow blood (1985) 59:93
Maher, J.T., *see* Huang, S.Y. (1984) 57:377
Mahutte, C.K., E.J.M. Campbell and K.J. Killian: Theory of resistive load detection (1983) 51:131
Maina, J.N., Morphometrics of the avian lung. 4. The structural design of the charadriiform lung (1987) 68:99
Maina, J.N., *see* Kamau, J.M.Z. (1984) 56:183
Maina, J.N.: Morphometrics of the avian lung. 3. The structural design of the passerine lung (1984) 55:291
Makowska, M., *see* Crawford, A.B.H. (1986) 66:11
Malaton, S., *see* Krasney, J.A. (1984) 57:73
Malik, A.B., *see* Hakim, T.S. (1988) 72:109
Malik, A.B., *see* Van der Zee, H. (1986) 64:125
Malik, A.B., *see* Van Der Zee, H. (1985) 61:31
Maloiy, G.M.O., *see* Kamau, J.M.Z. (1984) 56:183
Maloney, J.E., *see* Berger, P.J. (1986) 65:55
Malte, H. and R.E. Weber: A mathematical model for gas exchange in the fish gill based on non-linear blood gas equilibrium curves (1985) 62:359
Malte, H. and R.E. Weber: The effect of shape and position of the oxygen equilibrium curve on extraction and ventilation requirement in fishes (1987) 70:221
Malvin, G.M. and M.P. Hlastala: Regulation of cutaneous gas exchange by environmental O_2 and CO_2 in the frog (1986) 65:99
Manco, J.C., *see* Terra-Filho, J. (1987) 70:265
Manco-Johnson, M., *see* Huang, S.Y. (1988) 72:315
Mannix, S.E., P. Bye, J.M.B. Hughes, D. Cover and E.E. Davies: Effect of posture on ventilatory response to steady-state hypoxia and hypercapnia (1984) 58:87
Manohar, M., C.M. Parks, M. Busch and G.E. Bisgard: Bovine regional brain blood flow during sojourn at a simulated altitude of 3500 m (1984) 58:111
Manohar, M., Regional distribution of brain blood flow during maximal exertion in splenectomized ponies (1987) 68:77
Manohar, M.: Regional brain blood flow and O_2 delivery during severe exertion in the pony (1986) 64:339
Mansour, S. and E.E. Daniel: Structural changes in tracheal nerves and muscle associated with *in vivo* sensitization of guinea pigs (1988) 72:283
Manz, R., *see* Albers, C. (1983) 52:165
Marchal, F. and J.-P. Crance: Measurement of ventilatory system compliance in infants and young children (1987) 68:311
Marchal, F., J.P. Crance and P. Arnould: Ventilatory and waking responses to laryngeal stimulation in sleeping mature lambs (1986) 63:31
Marchal, F., P. Haouzi, C. Gallina and J.P. Crance: Measurement of ventilatory system resistance in infants and young children (1988) 73:201

Marconi, C., N. Heisler, M. Meyer, H. Weitz, D.R. Pendergast, P. Cerretelli and J. Piiper: Blood flow distribution and its temporal variability in stimulated dog gastrocnemius muscle (1988) 74:1
Marconi, C., *see* Cerretelli, P. (1988) 74:355
Marconi, C., *see* Pendergast, D.R. (1985) 61:317
Marden, M.C., *see* Kister, J. (1988) 73:367
Mardini, I.A., E.H. Schlenker and J.A. Burbach: Effects of dystrophy and age on hamster tracheal smooth muscle function (1986) 66:157
Maret, K., *see* Lahiri, S. (1983) 52:281
Marin-Neto, J.A., *see* Terra-Filho, J. (1987) 70:265
Marlot, D., J.-M. Macron and B. Duron: Inhibitory and excitatory effects on respiration by phrenic nerve afferent stimulation in cats (1987) 69:321
Marlot, D., *see* Macron, J.-M. (1985) 59:155
Marlot, D., *see* Parot, S. (1984) 58:253
Marques, L.B., *see* Weibel, E.R. (1987) 69:81
Marthan, R., C.L. Armour, P.R.A. Johnson and J.L. Black: Extracellular calcium and human isolated airway muscle: ionophore A23187 induced contraction (1988) 71:157
Marthan, R., J.-P. Savineau and J. Mironneau: Acetylcholine-induced contraction in human isolated bronchial smooth muscle: role of an intra-cellular calcium store (1987) 67:127
Martin, C.J., *see* Gleisner, J.M. (1986) 66:247
Martin, C.J., *see* Shimura (1985) 62:293
Martin, J.G., *see* Bates, J.H.T. (1987) 70:301
Martin-Body, R.L. and B.M. Johnston: Central origin of the hypoxic depression of breathing in the newborn (1988) 71:25
Martin-Body, R.L. and J.D. Sinclair: Analysis of respiratory patterns in the awake and in the halothane anaesthetised rat (1985) 61:105
Martin-Body, R.L. and J.D. Sinclair: Differences in respiratory patterns after acute and chronic pulmonary denervation (1987) 70:205
Mason, D.E., *see* Olson, L.E. (1988) 71:375
Massabuau, J.-C., *see* Burtin, B. (1986) 65: 235
Massabuau, J.-C., *see* Sakakibara, Y. (1987) 69:359
Matalon, S., *see* Krasney, J.A. (1985) 59:197
Matalon, S., *see* Nesarajah, M. S (1983) 53:161
Mathew, O.P. and J.P. Farber: Effect of upper airway negative pressure on respiratory timing (1983) 54:259
Mathew, O.P., F.B. Sant'Ambrogio and G. Sant'-Ambrogio: Effects of cooling on laryngeal reflexes in the dog (1986) 66:61
Mathew, O.P., F.B. Sant'Ambrogio and G. Sant'-Ambrogio: Laryngeal paralysis on receptor and reflex responses to negative pressure in the upper airway (1988) 74:25
Mathew, O.P., G. Sant'Ambrogio, J.T. Fisher and F.B. Sant'Ambrogio, Respiratory afferent activity in the superior laryngeal nerves (1984) 58:41
Mathew, O.P., G. Sant'Ambrogio, J.T. Fisher and F.B. Sant'Ambrogio: Laryngeal pressure receptors (1984) 57:113
Mathew, O.P., *see* Sant'Ambrogio, F.B. (1986) 66:205
Mathew, O.P., *see* Sant'Ambrogio, F.B. (1988) 71:343
Mathew, O.P., *see* Sant'Ambrogio, G. (1983) 54:317
Mathew, O.P., *see* Sant'Ambrogio, G. (1985) 59:35
Mathew, O.P., *see* Sant'Ambrogio, G. (1985) 61:289
Mathew, O.P., *see* Sant'Ambrogio, G. (1986) 64:45
Mathew, O.P., *see* Sant'Ambrogio, G. (1988) 71:287
Mathew, O.P., *see* Tsubone, H. (1987) 69:195
Mathew, O.P., *see* Woodall, D.L. (1986) 66:71
Matsumoto, S., *see* Mulligan, E. (1986) 63:375
Matthews, P.M., *see* Taylor, D.J. (1986) 63:275
Maxwell, D.L., D. Cover and J.M.B. Hughes: Effect of respiratory apparatus on timing and depth of breathing in man (1985) 61:255
Maxwell, D.L., J.M.B. Hughes and P.C.G. Nye: The effect of almitrine bismesylate on the steady-state response of arterial chemoreceptors to CO_2 and O_2 in the cat (1988) 74:275
Mayers, I. and J. Mink: Cardiac output effects of high-frequency oscillatory ventilation in normal dogs (1989) 75:247
Mayers, I., P.H. Breen, S. Gottlieb, R. Long and L.D.H. Wood: The effects of indomethacin on edema and gas exchange in canine acid aspiration (1987) 69:149
Mazar, A., *see* Sieck, G.C. (1985) 61:137
Mazur, G., *see* Baumann, R. (1984) 56:1
Mazzone, R.W., *see* Powell, F.L. (1983) 51:319
McArthur, C., *see* Iber, C. (1989) 75:349
McBride, B., *see* Whitelaw, W.A. (1988) 72:151
McCloskey, D.I., *see* Potter, E.K. (1987) 67:357

McCrimmon, D.R., *see* Olson, E.B., Jr. (1983) 54:79
McCullough, R.E., *see* Huang, S.Y. (1984) 57:377
McCullough, R.E., *see* Huang, S.Y. (1988) 72:315
McCullough, R.E., *see* Moore, L.G. (1987) 70:195
McCullough, R.G., *see* Huang, S.Y. (1984) 57:377
McCullough, R.G., *see* Huang, S.Y. (1988) 72:315
McCullough, R.G., *see* Moore, L.G. (1987) 70:195
McCutcheon, I.E. and J. Metcalfe: Capillaries and muscle fibers in the heart of the hyperoxic chick embryo (1984) 55:11
McDonald, B., *see* Pendergast, D.R. (1985) 61:317
McDonald, B.W., *see* Krasney, J.A. (1984) 57:73
McGovern, J.F., *see* Rist, K.E. (1986) 63:241
McGrath, J.J., *see* Davies, D.G. (1989) 75:193
McGregor, K.H., *see* Mulligan, E. (1986) 63:375
McKenzie, D., and S.C. Gandevia: Influence of muscle length on human inspiratory and limb muscle endurance (1987) 67:171
McKenzie, D.K., *see* Gandevia, S.C. (1983) 53:47
McKenzie, E., *see* Shea, S.A. (1988) 72:131
McLean, H.A., G.S. Mitchell and W.K. Milsom: Effects of prolonged inflation on pulmonary stretch receptor discharge in turtles (1989) 75:75
McMahon, B.R., *see* Booth, C.E. (1984) 58:359
McMahon, B.R., *see* Burnett, L.E. (1985) 62:341
McMahon, T.A., *see* Feldman, H.A. (1983) 52:149
McMurchie, E.J., *see* Ribbons, K.A. (1989) 75:1
McMurray, R.G. and L.G. Smith: Ventilatory responses when altering stride frequency at a constant oxygen uptake (1985) 62:117
McNamara, M.C. and E.E. Lawson: Biogenic amine turnover in newborn and adult rabbit brainstem nuclei after pargyline administration (1984) 58:313
McNamara, S.G., F.G. Issa, E. Szeto and C.E. Sullivan: Influence of negative pressure applied to the upper airway on the breathing pattern in unanesthetized awake dogs (1986) 65:315
Mei, N., *see* Jammes, Y. (1987) 67:379
Meister, B., *see* Kraemer, R. (1986) 65:127
Mekjavic, I.B., A. La Prairie, W. Burke and B. Lindborg: Respiratory drive during sudden cold water immersion (1987) 70:121
Mélot, C., R. Naeije, R. Hallemans, P. Lejeune and P. Mols: Hypoxic pulmonary vasoconstriction and pulmonary gas exchange in normal man (1987) 68:11
Menon, A.S., M.E. Weber and H.K. Chang: Model study of flow dynamics in human central airways. Part III. Oscillatory velocity profiles (1984) 55:255
Mercak, A.R., *see* Shannon, R. (1985) 60:193
Mercier, J., *see* Ramonatxo, M. (1986) 65:351
Merkt, J., *see* Hochachka, P.W. (1983) 52:303
Mesch, U., *see* Shams, H. (1989) 75:39
Meschia, G., *see* Accurso, F.J. (1986) 63:43
Mesina, J.E., *see* Busch, M.A. (1983) 54:353
Metcalfe, J., *see* Ingermann, R.L. (1983) 51:141
Metcalfe, J., *see* McCutcheon, I.E. (1984) 55:11
Metcalfe, J., *see* Stock, M.K. (1983) 52:1
Metcalfe, J., *see* Stock, M.K. (1984) 58:351
Metcalfe, J., *see* Stock, M.K. (1985) 62:217
Meuer, H.-J. and R. Baumann: Oxygen pressure in intra- and extraembryonic blood vessels of early chick embryo (1988) 71:331
Meyer, M., H. Rieke and C. Hook: Gas exchange efficacy of high-frequency oscillatory ventilation studied by helium washout from dog lungs (1986) 63:307
Meyer, M., *see* Marconi, C. (1988) 74:1
Meyer, M., *see* Piiper, J. (1984) 56:131
Meyer, M., *see* Rieke, H. (1983) 54:1
Meyer, M., *see* Scotto, P. (1987) 68:1
Micco, A.J., *see* Huang, S.Y. (1988) 72:315
Michel R.P., *see* Hakim, T.S. (1985) 61:115
Miki, K., *see* Krasney, J.A. (1985) 59:197
Miles, D.S., A.E. Enoch and S.C. Grevey: Interpretation of changes in $D_{L_{CO}}$ and pulmonary function after running five miles (1986) 66:135
Miles, D.S., C.E. Doerr, S.A. Schonfeld, D.E. Sink and R.W. Gotshall: Changes in pulmonary diffusing capacity and closing volume after running a marathon (1983) 52:349
Milic-Emili, J., *see* Derenne, J.-Ph. (1986) 65:303
Miller, L.S., *see* Maginiss, L.A. (1983) 53:15
Millhorn, D.E. and J.P. Kiley: Effect of graded cooling of intermediate areas on respiratory response to vagal input (1984) 58:51
Millhorn, D.E., F.L. Eldridge and J.P. Kiley: Oscillations of medullary extracellular fluid pH caused by breathing (1984) 55:193
Millhorn, D.E., F.L. Eldridge and T.G. Waldrop: Central neural stimulation of respiration by sodium salicylate (1983) 51:219
Millhorn, D.E., F.L. Eldridge, J.P. Eldridge, J.P. Kiley and T.G. Waldrop: Excitatory and inhibitory effects of morphine on the intercostal-to-phrenic respiratory reflex (1985) 62:79

Millhorn, D.E., F.L. Eldridge, J.P. Kiley and T.G. Waldrop: Prolonged inhibition of respiration following acute hypoxia in glomectomized cats (1984) 57:331
Millhorn, D.E., *see* Eldridge, F.L. (1983) 53:239
Millhorn, D.E., *see* Eldridge, F.L. (1985) 59:313
Millhorn, D.E., *see* Kiley, J.P. (1984) 58:295
Millhorn, D.E., *see* Kiley, J.P. (1985) 59:117
Millhorn, D.E., *see* Waldrop, T.G. (1983) 54:211
Millhorn, D.E., *see* Waldrop, T.G. (1986) 64:317
Millman, R.P., *see* Kelley, M.A. (1984) 55:393
Milsom, W.K. and R.W. Brill: Oxygen sensitive afferent information arising from the first gill arch of yellowfin tuna (1986) 66:193
Milsom, W.K., *see* Dodd, G.A.A. (1987) 68:189
Milsom, W.K., *see* Funk, G.D. (1987) 67:37
Milsom, W.K., *see* McLean, H.A. (1989) 75:75
Milsom, W.K., *see* Powell, F.L. (1988) 74:285
Mimata, T., *see* Ohe, M. (1986) 63:177
Miniati, M., *see* Miserocchi, G. (1986) 65:13
Mink, J., *see* Mayers, I. (1989) 75:247
Mink, J.T., *see* Cotton, D.J. (1983) 54:19
Mironneau, J., *see* Marthan, R. (1987) 67:127
Miserocchi, G., D. Negrini, A.F. Para, M. Pistolesi, M. Miniati, R. Bellina and C. Guintini: Kinetics of the intrapleural distribution of a radioactive bolus (1986) 65:13
Misley, M.C., *see* Wall, M.A. (1987) 69:287
Mitchell, G.S. and B.D. Selby: Effects of carotid denervation on interactions between lung inflation and Pa_{CO_2} in modulating phrenic activity (1987) 67:367
Mitchell, G.S. and E.H. Vidruk: Effects of hypercapnia on phrenic and stretch receptor responses to lung inflation (1987) 68:319
Mitchell, G.S. and T.T. Gleeson: Acid-base balance during lactic acid infusion in the lizard *Varanus solvator* (1985) 60:253
Mitchell, G.S., *see* Douse, M.A. (1988) 72:327
Mitchell, G.S., *see* McLean, H.A. (1989) 75:75
Mitchell, G.S., *see* Nielsen, A.M. (1986) 65:267
Mitchell, G.S., *see* Powell, F.L. (1988) 74:285
Mitchell, G.S., *see* Smith, C.A. (1983) 54:331
Mitchell, G.S.: Effects of hypoxemia on phrenic nerve responses to static lung inflation in anesthetized dogs (1987) 67:183
Mitchell, J.H., *see* Waldrop, T.G. (1986) 64:93
Mitra, J. and N.S. Cherniack: The effects of hypercapnia and hypoxia on single hypoglossal nerve fiber activity (1983) 54:55
Mitra, J., N.R. Prabhakar, J.L. Overholt and N.S. Cherniack: Respiratory and vasomotor responses to focal cooling of the ventral medullary surface (VMS) of the rat (1988) 74:35
Mitra, J., N.R. Prabhakar, M.A. Haxhiu and N.S. Cherniack: The effects of hypercapnia and cooling the ventral medullary surface on capsaicin induced respiratory reflexes (1985) 60:377
Mitra, J., *see* Haxhiu, M.A. (1984) 57:153
Mitra, J., *see* Haxhiu, M.A. (1984) 58:65
Mitra, J., *see* Haxhiu, M.A. (1986) 64:351
Mitra, J., *see* Haxhiu, M.A. (1987) 70:183
Mitra, J., *see* Overholt, J.L. (1988) 74:299
Mitra, J., *see* van Lunteren, E. (1983) 53:87
Mitzner, W., *see* Bennet, W.D. (1987) 67:85
Moalli, R., *see* Burggren, W. (1984) 55:379
Moffat, S.L., L. Byford and L. Forkert: Interregional gas mixing and gas transport during high frequency oscillations (1985) 62:1
Moffat, S.L., L. Byford and L. Forkert: Intraregional gas mixing in humans during high frequency oscillations (1986) 66:95
Mohr, M., *see* Shams, H. (1989) 75:39
Mokashi, A., *see* Andronikou, S. (1988) 72:361
Mokashi, A., *see* Mulligan, E. (1986) 63:375
Mols, P., *see* Mélot, C. (1987) 68:11
Monge, C., C., *see* Bonavia, D. (1985) 62:125
Monge C., C., *see* Winslow, R.M. (1985) 61:197
Monteau, R., *see* Gauthier, P. (1983) 54:67
Monteau, R., *see* Gauthier, P. (1986) 65:155
Monteau, R., *see* Hilaire, G. (1983) 51:341
Mook, P.H., *see* Ennema, J.J. (1984) 58:29
Moore, L.G., A. Cymerman, S.-Y. Huang, R.E. McCullough, R.G. McCullough, P.B. Rock, A. Young, P. Young, J.V. Weil and J.T. Reeves: Propranolol blocks metabolic rate increase but not ventilatory acclimatization to 4300 m (1987) 70:195
Moore, L.G., *see* Huang, S.Y. (1984) 57:377
Moore, M., *see* Moriette, G. (1985) 62:387
Morgan, J.J., G.N. Franz and D.G. Frazer: Regional difference in gas trapping (airway closure) between apex and base of excised rat lungs (1984) 55:309
Morgan, W.K.C., D. Ahmad, M.J. Chamberlain, H.W. Clague, M.G. Pearson and S. Vinitski: The effect of exercise on the deposition of an inhaled aerosol (1984) 56:327

Moriette, G., P. van Reempts, M. Moore, D. Cates and H. Rigatto: The effect of rebreathing CO_2 on ventilation and diaphragmatic electromyography in newborn infants (1985) 62:187

Morin-Surun, M.-P., J. Champagnat, E. Boudinot and M. Denavit-Saubié: Differentiation of two respiratory areas in the cat medulla using kainic acid (1984) 58:323

Morris, S., *see* Bridges, C.R. (1984) 57:189

Mortola, J., M. Saetta and D. Bartlett, Jr.: Postnatal development of the lung following denervation (1987) 67:137

Mortola, J.P. and R. Rezzonico: Metabolic and ventilatory rates in newborn kittens during acute hypoxia (1988) 73:55

Mortola, J.P. and S.M. Tenney: Effects of hyperoxia on ventilatory and metabolic rates of newborn mice (1986) 63:267

Mortola, J.P. and T. Piazza: Breathing pattern in rats with chronic section of the superior laryngeal nerves (1987) 70:51

Mortola, J.P., G. Citterio and E. Agostoni: Sulphur dioxide block of laryngeal receptors in rabbits (1985) 62:195

Mortola, J.P., *see* Bartlett, D., Jr. (1986) 64:13

Mortola, J.P., *see* Citterio, G. (1985) 62:203

Mortola, J.P., *see* Leiter, J.C. (1986) 64:267

Mortola, J.P., *see* Sullivan, K.J. (1987) 67:295

Mortola, J.P., *see* Xu, L. (1988) 74:177

Morton, M.J., *see* Hosenpud, J.D. (1983) 52:259

Morton, R.F., *see* Lee, L.-Y. (1986) 66:303

Morton, R.F., *see* Lee, L.-Y. (1988) 73:303

Moss, I.R. and E.M. Scarpelli: CO_2 and naloxone modify sleep/wake state and activate breathing in the acute fetal lamb preparation (1984) 55:325

Motais, R., *see* Claireaux, G. (1988) 74:91

Motais, R., *see* Fievet, B. (1988) 74:99

Motais, R., *see* Thomas, S. (1988) 74:77

Mückenhoff, K., G. Barnas and P. Scheid: Afferent vagal activity during hyperthermic polypnea in the pigeon (1989) 75:267

Mugnai Cavangna, A., *see* Agostoni, E. (1987) 67:335

Muir, W.W., *see* Olson, L.E. (1988) 71:375

Mulligan, E., S. Lahiri, A. Mokashi, S. Matsumoto and K.H. McGregor: Adrenergic mechanisms in oxygen chemoreception in the cat aortic body (1986) 63:375

Mullins, D.C., *see* Waldrop, T.G. (1986) 64:317

Mullins, D.C., *see* Waldrop, T.G. (1986) 66:215

Murphy, J.H., *see* Jackson, J.C. (1988) 73:291

Murphy, K., *see* Shea, S.A. (1987) 68:331

Murphy, K., *see* Shea, S.A. (1987) 68:345

Murray, K.R., *see* Van Liew, H.D. (1986) 66:355

Musch, T.I., *see* Smith, C.A. (1983) 54:331

Muster, D., *see* Albers, C. (1983) 52:165

Muza, S.R. and D.T. Frazier: Response of pulmonary stretch receptors to shifts of functional residual capacity (1983) 52:371

Muza, S.R., L.-Y. Lee, C.P. Pan, F.W. Zechman and D.T. Frazier: Respiratory volume–timing relationship during sustained elevation of functional residual capacity (1984) 58:77

Muzzin, S., T. Trippenbach, P. Baconnier and G. Benchetrit: Entrainment of the respiratory rhythm by periodic lung inflation during vagal cooling (1989) 75:157

Naeije, R., *see* Baer, R.E. (1987) 70:359

Naeije, R., *see* Mélot, C. (1987) 68:11

Nail, B., *see* Jammes, Y. (1987) 67:379

Nail, B., *see* Macefield, G. (1986) 64:57

Nail, B.S., *see* Davis, P.J. (1986) 65:285

Nail, B.S., *see* Davis, P.J. (1987) 70:327

Nail, B.S., *see* Macefield, G., 169 (1985) 62:181

Nakamura, M., *see* Sasaki, H. (1984) 56:21

Nakanishi, S., T. Hiramoto, N. Ahmed and Y. Nishimoto: Almitrine enhances in low dose the reactivity of pulmonary vessels to hypoxia (1988) 74:139

Nakazawa, S.-i., *see* Tazawa, H. (1988) 74:199

Nations, C.S., *see* Banzett, R.B. (1987) 70:287

Nattie, E.E. and E.A. Doble: Threshold of intermittent hypoxia-induced right ventricular hypertrophy in the rat (1984) 56:253

Nattie, E.E.: Intracisternal diethylpyrocarbonate inhibits central chemosensitivity in conscious rabbits (1986) 64:161

Nattie, E.E.: Ventilation during acute HCl infusion in intact and chemodenervated conscious rabbits (1983) 54:97

Neering, I.R., *see* Gandevia, S.C. (1983) 53:47

Negrini, D., *see* Miserocchi, G. (1986) 65:13

Nesarajah, M.S., S. Matalon, J.A. Krasney and L.E. Farhi: Cardiac output and regional oxygen transport in the acutely hypoxic conscious sheep (1983) 53:161

Nessly, M., *see* Tyler, D.C. (1984) 56:261

Neumann, P., *see* Holeton, G.F. (1983) 51:303

Newman, S.L., *see* Road, J.D. (1986) 65:39

Ng, C.K.Y., *see* Colebatch, H.J.H. (1986) 65:1

Nicholas, T.E. and H.A. Barr: The release of surfactant in rat lung by brief periods of hyperventilation (1983) 52:69
Nicholas, T.E., *see* Daniels, C.B. (1989) 75:335
Nicol, S., *see* Bech, C. (1984) 57:103
Nicol, S.C., *see* Stahel, C.D. (1988) 71:387
Nielsen, A.M. and G.E. Bisgard: Dopaminergic modulation of respiratory timing mechanisms in carotid body-denervated dogs (1983) 53:71
Nielsen, A.M., G.E. Bisgard and G.S. Mitchell: Phrenic nerve responses to hypoxia and CO_2 in decerebrate dogs (1986) 65:267
Nielsen, A.M., *see* Bisgard, G.E. (1987) 69:245
Nielsen, A.M., *see* Engwall, M.J.A. (1988) 74:335
Nielsen, A.M., *see* Hudgel, D.W. (1986) 64:202
Nielsen, A.M., *see* Kressin, N.A. (1986) 65:169
Niinimaa, V.: Oronasal airway choice during running (1983) 53:129
Nikiforov, A.I. and R.B. Schlesinger: Morphometric variability of the human upper bronchial tree (1985) 59:289
Nikinmaa, M., *see* Jensen, F.B. (1983) 51:291
Ninane, V., J.J. Gilmartin and A. De Troyer: Changes in abdominal muscle length during breathing in supine dogs (1988) 73:31
Ninane, V., *see* De Troyer, A. (1987) 67:311
Ninane, V., *see* Estenne, M. (1988) 74:151
Ninane, V., *see* Gilmartin, J.J. (1987) 70:159
Nishimoto, Y., *see* Nakanishi, S. (1988) 74:139
Noble, S., *see* Whitelaw, W.A. (1988) 72:151
Norcia, M.P., *see* Chandler Deal, E., Jr. (1987) 69:335
Norcia, M.P., *see* Haxhiu, M.A. (1986) 64:351
Norfleet, W.T. and C.L. Bradley: Can eucapnic hyperventilation prolong a subsequent breath-hold? (1987) 70:369
Nye, P.C.G. and F.L. Powell: Steady-state discharge and bursting of arterial chemoreceptors in the duck (1984) 56:369
Nye, P.C.G., M.A. Hanson and R.W. Torrance: The effect on breathing of abruptly reducing the discharge of central chemoreceptors (1983) 51:109
Nye, P.C.G., *see* Maxwell, D.L. (1988) 74:275
Nye, P.C.G., *see* Paterson, D.J. (1988) 74:229

O'Callaghan, M.W., *see* Hornof, W.J. (1988) 72:375
O'Neil, J.J., *see* Weibel, E.R. (1983) 54:173
Odeh, M., *see* Oliven, A. (1989) 75:29
Ogilvie, M.D., D.K. Bogen, R.J. Galante and A.I. Pack: Response of stretch receptors to static inflations and deflations in an isolated tracheal segment (1989) 75:289
Ohe, M., T. Mimata, T. Haneda and T. Takishima: Time course of pulmonary vasoconstriction with repeated hypoxia and glucose depletion (1986) 63:177
Okuda, A. and H. Tazawa: Gas exchange and development of chicken embryos with widely altered shell conductance from the beginning of incubation (1988) 74:187
Okuda, A., *see* Tazawa, H. (1988) 74:199
Oldridge, N.B., *see* Heigenhauser, G.J.F. (1983) 53:263
Olievier, C.N., *see* Schuitmaker, J.J. (1986) 64:69
Olievier, C.N., *see* Schuitmaker, J.J. (1987) 67:69
Olievier, C.N., *see* Van Beek, J.H.G.M. (1983) 51:379
Olievier, C.N., *see* Van Beek, J.H.G.M. (1984) 57:171
Olievier, C.N., *see* Van Beek, J.H.G.M. (1986) 63:65
Oliven, A., M. Odeh and N. Gavriely: Effects of hypercapnia on upper airway resistance and collapsibility in anesthetized dogs (1989) 75:29
Oliven, A., S. Lohda, M.E. Adams, B. Simhai and S.G. Kelsen: Effect of fatiguing resistive loads on the level and pattern of respiratory activity in awake goats (1988) 73:313
Olivier, C.N., *see* Berkenbosch, A. (1984) 55:95
Olson, E.B., Jr., E.H. Vidruk, D.R. McCrimmon and J.A. Dempsey: Monoamine neurotransmitter metabolism during acclimatization to hypoxia in rats (1983) 54:79
Olson, E.B., Jr., Ventilatory adaptation to hypoxia occurs in serotonin-depleted rats (1987) 69:227
Olson, L.E., D.E. Mason and W.W. Muir: Innervation of crab-eating monkey trachealis muscle determined *in vitro* (1988) 71:375
Olson, L.G. and K.P. Strohl: Non-muscular factors in upper airway patency in the rabbit (1988) 71:147
Olson, L.G. and N.A. Saunders: The effect of central and peripheral dopamine-agonists on ventilation in the mouse (1985) 61:335
Olszowka, A.J., H. Tazawa and H. Rahn: A blood-gas nomogram of the chick fetus: blood flow distribution between the chorioallantois and fetus (1988) 71:315

Olszowka, A.J., *see* Paganelli, C.V. (1988) 71:45
Onayemi, A., *see* England, S.J. (1985) 60:357
Ordway, G.A., *see* Waldrop, T.G. (1984) 58:187
Orem, J.M., *see* Dick, T.E. (1984) 56:385
Orr, J.A., M.R. Fedde, H. Shams, H. Röskenbleck and P. Scheid: Absence of CO_2-sensitive venous chemoreceptors in the cat (1988) 73:211
Otis, A.B., *see* Macintosh, B.R. (1985) 60:329
Ou, L.C. and R.P. Smith: Probable strain difference of rats in susceptibilities and cardiopulmonary responses to chronic hypoxia (1983) 53:367
Ou, L.C., G.L. Sardella, N.S. Hill and S.M. Tenney: Acute and chronic pulmonary pressor responses to hypoxia: the role of blunting in acclimatization (1986) 64:81
Ou, L.C., N.S. Hill and S.M. Tenney: Ventilatory responses and blood gases in susceptible and resistant rats to high altitude (1984) 58:161
Ou, L.C., *see* Hill, N.S. (1984) 58:171
Ou, L.C., *see* Hill, N.S., 229 (1987) 70:241
Ou, L.C., W.M. St. John and S.M. Tenney: The contribution of central mechanisms rostral to the pons in high altitude ventilatory acclimatization (1983) 54:343
Ou, L.C., Y.N. Cai and S.M. Tenney: Responses of blood volume and red cell mass in two strains of rats acclimatized to high altitude (1985) 62:85
Overholt, J.L., J. Mitra, E. Van Lunteren, N.R. Prabhakar and N.S. Cherniack: Naloxone enhances the response to hypercapnia of spinal and cranial respiratory nerves (1988) 74:299
Overholt, J.L., *see* Mitra, J. (1988) 74:35
Owe, J.O., *see* Smeland, E.B. (1984) 56:245
Owens, D., *see* Bettice, J.A. (1984) 55:121

Pack, A.I., *see* Ogilvie, M.D. (1989) 75:289
Paganelli, C.V., P.R. Sotherland, A.J. Olszowka and H. Rahn: Regional differences in diffusive conductance/perfusion ratio in the shell of the hen's egg (1988) 71:45
Paganelli, C.V., *see* Tøien, Ø. (1988) 74:345
Paiva, M., A. van Muylem, P. Ravez and J.C. Yernault: Preinspiratory lung volume dependence of the slope of the alveolar plateau (1986) 63:327
Paiva, M., A. Van Muylem, P. Ravez and J.C. Yernault: Inspired volume dependence of the slope of the alveolar plateau (1984) 56:309
Paiva, M. and L.A. Engel: Model analysis of intraacinar gas exchange (1985) 62:257
Paiva, M., S. Verbanck and A. Van Muylem: Diffusion-dependent contribution to the slope of the alveolar plateau (1988) 72:257
Paiva, M., *see* Verbanck, S. (1988) 73:273
Palmer, S., *see* Jackson, J.C. (1988) 73:291
Pan, C.P., *see* Muza, S.R. (1984) 58:77
Pantaleo, T. and M. Corda: Respiration-related neurons in the medial nuclear complex of the solitary tract of the cat (1986) 64:135
Para, A.F., *see* Miserocchi, G. (1986) 65:13
Parer, J.T., *see* Benavides, C.E. (1989) 75:327
Parker, D.M., *see* van Lunteren, E. (1983) 53:87
Parkos, C.A. and E.A. Wahrenbrock: Acute effects of hypercapnia and hypoxia on minute ventilation in unrestrained Weddell seals (1987) 67:197
Parks, C.M., *see* Manohar, M. (1984) 58:111
Parmeggiani, P.L., *see* Dick, T.E. (1984) 56:385
Parot, S., M. Bonora, H. Gautier and D. Marlot: Developmental changes in ventilation and breathing pattern in unanesthetized kittens (1984) 58:253
Patane, L., *see* Scotto, P. (1987) 68:1
Paterson, D.J. and P.C.G. Nye: The effect of beta adrenergic blockade on the carotid body response to hyperkalaemia in the cat (1988) 74:229
Patrick, J.M., *see* Western, P.J. (1988) 72:123
Paulson, D.J., *see* Fregosi, R.F. (1987) 67:225
Peace, R.J., *see* Barnes, S.D. (1983) 53:285
Pearson, M.G., *see* Morgan, W.K.C. (1984) 56:327
Pegelow, D.F., *see* Sharratt, M.T. (1987) 70:313
Pelley, C., *see* Shea, S.A. (1987) 68:345
Pelster, B., C.R. Bridges and M.K. Grieshaber: Physiological adaptations of the intertidal rockpool teleost *Blennius pholis* L., to aerial exposure (1988) 71:355
Pelster, B., *see* Bridges, C.R. (1985) 61:125
Pendergast, D.R., J.A. Krasney, A. Ellis, B. McDonald, C. Marconi and P. Cerretelli: Cardiac output and muscle blood flow in exercising dogs (1985) 61:317
Pendergast, D.R., *see* Marconi, C. (1988) 74:1
Pequignot, J.M., *see* Favier, R.J. (1985) 61:167
Pérez, R., *see* Benavides, C.E. (1989) 75:327
Petersen, R.G., *see* Accurso, F.J. (1986) 63:43
Peterson, C.V., Jr., *see* Macintosh, B.R. (1985) 60:329
Peterson, D.D., *see* Kelley, M.A. (1984) 55:393

Petrini, M.F., H.T. Robertson and M.P. Hlastala: Interaction of series and parallel dead space in the lung (1983) 54:121
Peyraud, C., *see* Le Moigne, J. (1986) 66:341
Peyraud-Waitzenegger, M., *see* Le Moigne, J. (1986) 66:341
Peyrin, L., *see* Favier, R.J. (1985) 61:167
Pfenninger, J., *see* Zeltner, T.B. (1987) 67:247
Pham Dinh, T., *see* Benchetrit, G. (1989) 75:199
Pham Dinh, T., *see* Shea, S.A. (1989) 75:211
Phillips, T., *see* Warley, A. (1989) 75:183
Phillipson, E.A., *see* England, S.J. (1986) 66:327
Phillipson, E.A., *see* Harding, R. (1986) 66:315
Piantadosi, C.A., *see* Hampson, N.B. (1987) 70:143
Piazza, T., *see* Mortola, J.P. (1987) 70:51
Piccoli, S., *see* Agostoni, E. (1985) 60:311
Piccoli, S., *see* Citterio, G. (1985) 59:169
Piccoli, S., *see* G. Citterio (1983) 51:259
Pichon, D., *see* Daubenspeck, J.A. (1988) 73:87
Piechowski, J., *see* Becquemin, M.H. (1987) 67:147
Pierson, D.J., *see* Hlastala, M.P. (1985) 60:277
Pietschmann, M. and H. Bartels: Cellular hyperplasia and hypertrophy, capillary proliferation and myoglobin concentration in the heart of newborn and adult rats at high altitude (1985) 59:347
Piiper, J. and P. Scheid: Comparison of diffusion and perfusion limitations in alveolar gas exchange (1983) 51:287
Piiper, J. and P. Scheid: Cross-sectional P_{O_2} distributions in Krogh cylinder and solid cylinder models (1986) 64:241
Piiper, J., M. Meyer and P. Scheid: Dual role of diffusion in tissue gas exchange: Blood-tissue equilibration and diffusion shunt (1984) 56:131
Piiper, J., *see* Feder, M.E. (1988) 72:229
Piiper, J., *see* Holland, R.A.B. (1985) 59:71
Piiper, J., *see* Hook, C. (1988) 72:65
Piiper, J., *see* Loeppky, J.A. (1985) 60:135
Piiper, J., *see* Marconi, C. (1988) 74:1
Piiper, J., *see* Scheid, P. (1986) 63:1
Piiper, J., *see* Scheid, P. (1986) 64:365
Piiper, J., *see* Scotto, P. (1987) 68:1
Piiper, J., *see* Scotto, P. (1987) 68:251
Piiper, J., *see* Seymour, R.S. (1988) 71:101
Piiper, J., *see* Shams, H. (1989) 75:39
Piiper, J., *see* Tazawa, H. (1983) 53:173
Piiper, J., *see* Tazawa, H. (1983) 54:137
Piiper, J., *see* Visschedijk, A.H.J. (1985) 59:339
Piiper, J., *see* Yamaguchi, K. (1987) 67:209
Piiper, J., *see* Yamaguchi, K. (1989) 75:371
Pinder, A.W., Cutaneous diffusing capacity increases during hypoxia in cold submerged bullfrogs (*Rana catesbeiana*) (1987) 70:85
Piper, J., *see* Tazawa, H. (1984) 57:123
Pisarri, T.E., J. Yu, H.M. Coleridge and J.C.G. Coleridge: Background activity in pulmonary vagal C-fibers and its effects on breathing (1986) 64:29
Pisarri, T.E., *see* Jonzon, A. (1988) 72:19
Pistolesi, M., *see* Miserocchi, G. (1986) 65:13
Plassman, B.L., *see* Gandevia, S.C. (1988) 73:329
Ploysongsang, Y., *see* Schonfeld, S.A. (1983) 51:63
Ploysongsang, Y.: The lung sounds phase angle test for detection of small airway disease (1983) 53:203
Pocidalo, J.J., *see* Girard, P. (1984) 57:23
Polianski, J., *see* Girard, P. (1984) 57:23
Pörtner, H.O., N. Heisler and M.K. Grieshaber: Oxygen consumption and mode of energy production in the intertidal worm *Sipunculus nudus* L.: Definition and characterization of the critical P_{O_2} for an oxyconformer (1985) 59:361
Posey-Daniel, V., *see* Daniel, E.E. (1986) 63:109
Potter, E.K. and D.I. McCloskey: Excitation of carotid body chemoreceptors by neuropeptide-Y (1987) 67:357
Poupin, J., *see* Thomas, S. (1987) 68:85
Powell, F.L. and R.W. Mazzone: Morphometrics of rapidly frozen goose lungs (1983) 51:319
Powell, F.L., *see* Bickler, P.E. (1986) 63:151
Powell, F.L., *see* Hastings, R.H. (1986) 63:139
Powell, F.L., *see* Hempleman, S.C. (1986) 63:285
Powell, F.L., *see* Nye, P.C.G. (1984) 56:369
Powell, F.L., W.K. Milsom and G.S. Mitchell: Effects of intrapulmonary CO_2 and airway pressure on pulmonary vagal afferent activity in the alligator (1988) 74:285
Powers, S.K., R.E. Beadle, J. Lawler and D. Thompson: Oxygen deficit-oxygen debt relationships in ponies during submaximal treadmill exercise (1987) 70:251
Poyart, C., *see* Girard, F. (1987) 68:227
Poyart, C., *see* Kister, J. (1988) 73:367
Prabhakar, N.R., *see* Mitra, J. (1985) 60:377
Prabhakar, N.R., *see* Mitra, J. (1988) 74:35
Prabhakar, N.R., *see* Overholt, J.L. (1988) 74:299
Prabhakar, N.R., *see* Van Lunteren, E. (1988) 72:303

Prange, H.D., J.S. Wasser, A.S. 'Gaunt and S.L.L. Gaunt: Respiratory responses to acute heat stress in cranes (Gruidae): The effects of tracheal coiling (1985) 62:95
Préfaut, Ch., *see* Ramonatxo, M. (1986) 65:351
Presley, D., *see* Souhrada, J.F. (1983) 53:225
Primmett, D., *see* Heming, T.A. (1986) 65:223
Punt, G.J., *see* Ballintijn, C.M. (1985) 60:39
Py, P., *see* Werlen, C. (1984) 55:205
Pyles, R., *see* Gans, C. (1983) 53:215

Quanjer, P.H., *see* De Groodt, E.G. (1986) 65:139
Quanjer, Ph.H., *see* Berkenbosch, A. (1984) 55:95

Raabe, O., *see* Hornoff, W.J. (1988) 72:375
Radda, G.K., *see* Taylor, D.J. (1986) 63:275
Raddatz, E. and P. Kucera: CO_2 production of the chick embryo during the first day of postlaying development (1988) 71:133
Raddatz, E. and P. Kucera: Mapping of the oxygen consumption in the gastrulating chick embryo (1983) 51:153
Raddatz, E., P. Kucera and Y. De Ribaupierre: Micro-measurement of total and regional CO_2 productions in the one-day-old chick embryo (1987) 70:1
Rahn, H., Air cell gas tensions of the chick embryo at sea level and altitude: the contribution of Aggazzotti, 1914, (1988) 72:343
Rahn, H., *see* Ar, A. (1985) 61:1
Rahn, H., *see* Olszowka, A.J. (1988) 71:315
Rahn, H., *see* Paganelli, C.V. (1988) 71:45
Rahn, H., *see* Rokitka, M.A. (1987) 68:371
Rahn, H., *see* Tøien, Ø. (1988) 74:345
Rahn, H., *see* Visschedijk, A.H.J. (1983) 52:137
Ramonatxo, M., J. Mercier, R. El-Fassi-Ben Abdallah, P. Vago and Ch. Préfaut: Breathing pattern and occlusion pressure during exercise in pre- and peripubertal swimmers (1986) 65:351
Randall, D.J., *see* Boutilier, R.G. (1988) 71:69
Randall, D.J., *see* Boutillier, R.G. (1985) 61:237
Randall, D.J., *see* Heming, T.A. (1986) 65:223
Rautenberg, W., *see* Barnas, G.M. (1984) 57:89
Rautenberg, W., *see* Barnas, G.M. (1986) 66:293
Ravez, P., *see* Paiva, M. (1984) 56:309
Ravez, P., *see* Paiva, M. (1986) 63:327
Raybould, H.E., *see* Trenchard, D. (1984) 55:63
Reeves, J.T., *see* Huang, S.Y. (1984) 57:377
Reeves, J.T., *see* Huang, S.Y. (1988) 72:315
Reeves, J.T., *see* Moore, L.G. (1987) 70:195
Reeves, J.T., *see* Tucker, A. (1983) 54:363
Reeves, R.B., *see* Karas, R.H. (1987) 69:101
Reeves, R.B., *see* Lapennas, G.N., 13 (1983) 52:27
Reid, M.B., *see* Banzett, R.B. (1985) 61:57
Reijngoud, D.-J., *see* Ennema, J.J., 15 (1984) 58:29
Reisfeld, B. and J.S. Ultman: Longitudinal mixing in dog lungs during high-frequency forced flow oscillation (1988) 71:269
Resko, J.A., *see* Hohimer, A.R. (1985) 61:383
Resko, J.A., *see* Hosenpud, J.D. (1983) 52:259
Revow, M., *see* Zamel, D. (1989) 75:19
Rex, K.A., *see* Davenport, P.W. (1984) 56:359
Reyngoud, D.J., *see* Egberts, J. (1985) 62:281
Rezzonico, R., *see* Mortola, J.P. (1988) 73:55
Ribbons, K.A., R.V. Baudinette and E.J. McMurchie: The development of pulmonary surfactant lipids in a neonatal marsupial and the rat (1989) 75:1
Richardson, B.S., *see* Hohimer, A.R. (1983) 52:99
Rieke, H., C. Hook and M. Meyer: Pulmonary gas exchange during high-frequency ventilation in dogs (1983) 54:1
Rieke, H., *see* Meyer, M. (1986) 63:307
Riepl, G., *see* Bridges, C.R. (1983) 51:275
Rigatto, H., *see* Moriette, G. (1985) 62:387
Riley, S., *see* Bettice, J.A. (1984) 55:121
Rimes, A.F., *see* Holland, R.A.B. (1988) 73:69
Riquelme, R., *see* Benavides, C.E. (1989) 75:327
Rist, K.E., J.A. Daubenspeck and J.F. McGovern: Effects of non-REM sleep upon respiratory drive and the respiratory pump in humans (1986) 63:241
Rist, K.E., *see* St. John, W.M. (1984) 56:237
Road, J.D., S.L. Newman and A. Grassino: Diaphragm length and breathing pattern changes during hypoxia and hypercapnia (1986) 65:39
Robeau, D., *see* Becquemin, M.H. (1987) 67:147
Roberts, A.M., H.M. Coleridge and J.C.G. Coleridge: Reciprocal action of pulmonary vagal afferents on tracheal smooth muscle tension in dogs (1988) 72:35
Roberts, A.M., *see* Jonzon, A. (1988) 72:19
Roberts, B.L., *see* Ballintijn, C.M. (1983) 51:241
Robertshaw, D., *see* Schroter, R.C. (1987) 70:97
Robertshaw, D., *see* Tucker, A. (1983) 54:363
Robertson, B., D. Berry, T. Curstedt, G. Grossmann, M. Ikegami, H. Jacobs, A. Jobe and S. Jones: Leakage of protein in the immature rabbit lung; effect of surfactant replacement (1985) 61:265
Robertson, H.T., *see* Petrini, M.F. (1983) 54:121

Robinson, N.E., *see* Fuller, S.D. (1988) 74:253
Rochat, T., A.F. Junod and R.C. Gaillard: Circulating endogenous opioids and ventilatory response to CO_2 and hypoxia (1985) 61:85
Rochester, D.F., *see* Hill, A.R. (1985) 61:369
Rochette, F., *see* Teppema, L.J. (1988) 74:373
Rock, P.B., *see* Moore, L.G. (1987) 70:195
Rodenstein, D.O., L. Goncette and D.C. Stanescu: Extrathoracic airways changes during plethysmographic measurements of lung volume (1983) 52:217
Rokitka, M.A. and H. Rahn: Regional differences in shell conductance and pore density of avian eggs (1987) 68:371
Romaniuk, J.R., *see* Davies, J.G. McF. (1986) 64:277
Romeo, R.M., *see* Coast, J.R. (1989) 75:279
Rorie, D.K., G.M. Tyce, W. Edwards, R. Sittipong and M.P. Kaye: Chronic hypoxia alters structure and transmitter dynamics in dog pulmonary artery (1988) 74:211
Röskenbleck, H., *see* Orr, J.A. (1988) 73:211
Rösler, K., *see* Conley, K.E. (1987) 69:47
Rösler, K., *see* Karas, R.H. (1987) 69:65
Rossing, T.H., *see* Solway, J. (1985) 60:267
Roszinski, S. and W. Jelkmann: Effect of P_{O_2} on prostaglandin E_2 production in renal cell cultures (1987) 70:131
Rothstein, S., K.D. Jürgens, H. Bartels and R. Baumann: Oxygen and carbon dioxide transport in the blood of the muskrat (*Ondatra zibethica*), (1984) 57:15
Roussos, Ch., *see* Howell, S. (1985) 62:15
Roy, M., *see* Becquemin, M.H. (1987) 67:147
Rubin, A.E., *see* Arieli, R. (1988) 71:247
Rurak, D.W. and C. Cooper: The effect of relative hypoxemia on the pattern of breathing movements in fetal lambs (1984) 55:23
Russell, J.A., Presynaptic α-2 receptors inhibit norepinephrine release in tracheal smooth muscle (1987) 70:25
Russell, N.J.W., *see* Trenchard, D. (1984) 55:63
Ryall, R.G., *see* Baudinette, R.V. (1988) 72:219
Rybicki, K.J. and M.P. Kaufman: Stimulation of group III and IV muscle afferents reflexly decreases total pulmonary resistance in dogs (1985) 59:185
Rybicki, K.J., *see* Kaufman, M.P. (1984) 56:61
Rybicki, K.J., *see* Waldrop, T.G. (1984) 58:187

Saari, A.F., *see* Solway, J. (1985) 60:267
Saetta, M., *see* Mortola, J. (1987) 67:137
Said, S.I., *see* Venugopalan, C.S. (1984) 56:205
Saidel, G.M. and J.-S. Lin: Transport abnormalities from single-breath dynamics of Ar, CO_2 and O_2 (1986) 64:253
Sakakibara, Y., B. Burtin and J.-C. Massabuau: Circadian rhythm of extracellular pH in crayfish at different levels of oxygenation (1987) 69:359
Salamone, J., *see* van Lunteren, E. (1983) 53:87
Saldiva, P.H.N., *see* Caldeira, M.P.R. (1988) 73:43
Samaja, M., P.E. Di Prampero and P. Cerretelli: The role of 2,3-DPG in the oxygen transport at altitude (1986) 64:191
Samaja, M., Prediction of the oxygenation of human organs at varying blood oxygen carrying properties (1988) 72:211
Sampson, J.B., *see* Huang, S.Y. (1984) 57:377
Sanchez-Griñán, M.I., *see* Bonavia, D. (1985) 62:125
Sanders, N.K., A.J. Arp and J.J. Childress: Oxygen binding characteristics of the hemocyanins of two deep-sea hydrothermal vent crustaceans (1988) 71:57
Sanii, M.R., *see* Faridy, E.E. (1988) 73:225
Sanii, M.R., *see* Faridy, E.E. (1989) 75:309
Sanii, M.R., *see* Faridy, E.E., 171 (1988) 72:195
Sanjak, M., *see* Fregosi, R.F. (1987) 67:225
Sant'Ambrogio, F.B., G. Sant'Ambrogio and O.P. Mathew: Effects of airway cooling on tracheal stretch receptors (1986) 66:205
Sant'Ambrogio, F.B., G. Sant'Ambrogio, O.P. Mathew and H. Tsubone: Contraction of trachealis muscle and activity of tracheal stretch receptors (1988) 71:343
Sant'Ambrogio, F.B., J.T. Fisher and G. Sant'-Ambrogio: Adaptation of airway stretch receptors in newborn and adult dogs (1983) 52:361
Sant'Ambrogio, F.B., *see* Fisher, J.T. (1983) 53:325
Sant'Ambrogio, F.B., *see* Mathew, O.P. (1984) 57:113
Sant'Ambrogio, F.B., *see* Mathew, O.P. (1984) 58:41
Sant'Ambrogio, F.B., *see* Mathew, O.P. (1986) 66:61
Sant'Ambrogio, F.B., *see* Mathew, O.P. (1988) 74:25
Sant'Ambrogio, F.B., *see* Sant'Ambrogio, G. (1983) 54:317
Sant'Ambrogio, F.B., *see* Sant'Ambrogio, G. (1985) 59:35

Sant'Ambrogio, F.B., *see* Sant'Ambrogio, G. (1985) 61:289
Sant'Ambrogio, F.B., *see* Sant'Ambrogio, G. (1988) 71:287
Sant'Ambrogio, G., F. Brambilla-Sant'Ambrogio and O.P. Mathew: Effect of cold air on laryngeal mechanoreceptors in the dog (1986) 64:45
Sant'Ambrogio, G., O.P. Mathew and F.B. Sant'-Ambrogio: Characteristics of laryngeal cold receptors (1988) 71:287
Sant'Ambrogio, G., O.P. Mathew and F.B. Sant'-Ambrogio: Role of intrinsic muscles and tracheal motion in modulating laryngeal receptors (1985) 61:289
Sant'Ambrogio, G., O.P. Mathew, F.B. Sant'-Ambrogio and J.T. Fisher: Laryngeal cold receptors (1985) 59:35
Sant'Ambrogio, G., O.P. Mathew, J.T. Fisher and F.B. Sant'Ambrogio: Laryngeal receptors responding to transmural pressure, airflow and local muscle activity (1983) 54:317
Sant'Ambrogio, G., *see* Fisher, J.T. (1983) 53:325
Sant'Ambrogio, G., *see* Mathew, O.P. (1984) 57:113
Sant'Ambrogio, G., *see* Mathew, O.P. (1984) 58:41
Sant'Ambrogio, G., *see* Mathew, O.P. (1986) 66:61
Sant'Ambrogio, G., *see* Mathew, O.P. (1988) 74:25
Sant'Ambrogio, G., *see* Sant'Ambrogio, F.B. (1983) 52:361
Sant'Ambrogio, G., *see* Sant'Ambrogio, F.B. (1986) 66:205
Sant'Ambrogio, G., *see* Sant'Ambrogio, F.B. (1988) 71:343
Sant'Ambrogio, G., *see* Tsubone, H. (1987) 69:195
Sardella, G.L., *see* Hill, N.S. (1987) 70:229
Sardella, G.L., *see* Ou, L.C. (1986) 64:81
Sasaki, H., Inoue, S. Suzuki, M. Nakamura and T. Takishima: Effect of lung surface tension on pulmonary vascular mechanics in excised dog lungs (1984) 56:21
Sasaki, H., *see* Kakuta, Y. (1985) 60:9
Satake, T., *see* Ito, M. (1985) 59:143
Satake, T., *see* Ito, M. (1985) 61:43
Saunders, N.A., *see* Olson, L.G. (1985) 61:335
Savineau, J.-P., *see* Marthan, R. (1987) 67:127
Savoy, J., E. Allgöwer, C. Courteheuse and A.F. Junod: Ventilatory response to bronchospasm induced by methylcholine and histamine in man (1984) 56:195
Scarpelli, E.M., *see* Kumar, A. (1983) 51:195
Scarpelli, E.M., *see* Moss, I.R. (1984) 55:325
Scharf, S.M., *see* Bark, H. (1986) 63:187
Scheid, P. and J. Piiper: Inert gas wash-out from tissue: Model analysis (1986) 63:1
Scheid, P., C. Hook and J. Piiper: Model for analysis of counter-current gas transfer in fish gills (1986) 64:365
Scheid, P., *see* Bridges, C.R. (1983) 51:275
Scheid, P., *see* Bridges, C.R. (1985) 61:125
Scheid, P., *see* Fedde, M.R. (1986) 66:109
Scheid, P., *see* Geiser, J. (1984) 57:1
Scheid, P., *see* Holland, R.A.B. (1985) 59:71
Scheid, P., *see* Hook, C. (1988) 72:65
Scheid, P., *see* Mückenhoff, K. (1989) 75:267
Scheid, P., *see* Orr, J.A. (1988) 73:211
Scheid, P., *see* Piiper, J. (1983) 51:287
Scheid, P., *see* Piiper, J. (1984) 56:131
Scheid, P., *see* Piiper, J. (1986) 64:241
Scheid, P., *see* Shams, H. (1987) 67:1
Scheid, P., *see* Shams, H. (1988) 71:169
Scheid, P., *see* Shams, H. (1989) 75:39
Scheid, P., *see* Yamaguchi, K. (1987) 67:209
Scheid, P., *see* Yamaguchi, K. (1989) 75:371
Schertel, E.R., *see* Adams, L. (1987) 70:343
Schertel, E.R., *see* Schneider, D.A. (1987) 67:347
Schibli, H., *see* Geiser, J. (1983) 52:53
Schlenker, E.H., *see* Mardini, A.I. (1986) 66:157
Schlesinger, R.B., *see* Nikiforov, A.I. (1985) 59:289
Schmidt-Nielsen, K., *see* Jones, J.H. (1983) 54:189
Schmidt, W., D. Böning and K.M. Braumann: Red cell age effects on metabolism and oxygen affinity in humans (1987) 68:215
Schmidt-Nielsen, K., *see* Jones, J.H. (1985) 59:15
Schmidt-Nielsen, K., *see* Schroter, R.C. (1987) 70:97
Schneider, D.A., E.R. Schertel and J.F. Green: Effects of end-expired pressure on phrenic output in servo-ventilated dogs (1987) 67:347
Schneider, D.A., *see* Adams, L. (1987) 70:343
Schonfeld, S.A. and Y. Ploysongsang: Airway closure and trapped gas during low volume breathing (1983) 51:63
Schonfeld, S.A., *see* Miles, D.S. (1983) 52:349

Schroter, R.C., D. Robertshaw, M.A. Baker, V.H. Shoemaker, R. Holmes and K. Schmidt-Nielsen: Respiration in heat stressed camels (1987) 70:97

Schroter, R.C., *see* Kamm, R.D. (1989) 75:141

Schroter, R.C., *see* Knudson, R.J., 113 (1983) 52:125

Schuitmaker, J.J., A. Berkenbosch, J. de Goede and C.N. Olievier: Effects of CO_2 and H^+ on the ventilatory response to peripheral chemoreceptor stimulation (1986) 64:69

Schuitmaker, J.J., A. Berkenbosch, J. de Goede and C.N. Olievier: Ventilatory responses to respiratory and metabolic acid-base disturbance in cats (1987) 67:69

Schultz, H., *see* Shams, H. (1989) 75:39

Schulz, A.R., Energy metabolism in the whole animal revisited (1988) 73:11

Schürch, S., H. Bachofen and E.R. Weibel: Alveolar surface tensions in excised rabbit lungs: effect of temperature (1985) 62:31

Schuster, K.-D.: Diffusion limitation and limitation by chemical reactions during alveolar-capillary transfer of oxygen-labeled CO_2 (1987) 67:13

Schuster, K.D.: Kinetics of pulmonary CO_2 transfer studied by using labeled carbon dioxide $C^{16}O^{18}O$ (1985) 60:21

Scotto, P., J.A. Loeppky, J. Piiper and L.E. Farhi: Acid-base status immediately following rapid changes of alveolar gas composition in awake dogs (1987) 68:251

Scotto, P., *see* Loeppky, J.A. (1985) 60:135

Scotto, P., Y. Ichinose, L. Patane, M. Meyer and J. Piiper: Alveolar-capillary diffusion of oxygen in dogs exercising in hypoxia (1987) 68:1

Sears, T.A., *see* Davies, J.G. McF. (1986) 64:277

Sebert, P. and L. Barthelemy: Effects of high hydrostatic pressure *per se*, 101 atm on eel metabolism (1985) 62:349

Selby, B.D., *see* Mitchell, G.S. (1987) 67:367

Selkurt, E.E.: Effect of acute pulmonary hypertension on pressure/flow in the canine pulmonary vascular bed (1985) 60:169

Seymour, R.S. and J. Piiper: Aeration of the shell membranes of avian eggs (1988) 71:101

Seymour, R.S.: Functional venous admixture in the lungs of the turtle, *Chrysemys scripta* (1983) 53:99

Shams, H. and P. Scheid: Respiration and blood gases in the duck exposed to normocapnic and hypercapnic hypoxia (1987) 67:1

Shams, H., B.A. Peskar and P. Scheid: Acid infusion elicits thromboxane A_2-mediated effects on respiration and pulmonary hemodynamics in the cat (1988) 71:169

Shams, H., H. Schultz, M. Mohr, H. Kobayashi, U. Mesch, A. Das, P. Scheid and J. Piiper: Cyclooxygenase inhibition and effects of hypoxia on pulmonary circulation and gas exchange in anesthetized dogs (1989) 75:39

Shams, H., *see* Orr, J.A. (1988) 73:211

Shannon, R. and B.C. Lindsey: Intercostal and abdominal muscle afferent influence on pneumotaxic center respiratory neurons (1983) 52:85

Shannon, R., W.T. Shear, A.R. Mercak, D.C. Bolser and B.G. Lindsey: Non-vagal reflex effects on medullary inspiratory neurons during inspiratory loading (1985) 60:193

Sharratt, M.T., K.G. Henke, E.A. Aaron, D.F. Pegelow and J.A. Dempsey: Exercise-induced changes in functional residual capacity (1987) 70:313

Shaw, J., *see* Black, J.L. (1984) 57:269

Shea, S.A., G. Benchetrit, T. Pham Dinh, R.D. Hamilton and A. Guz: The breathing patterns of identical twins (1989) 75:211

Shea, S.A., J. Walter, C. Pelley, K. Murphy and A. Guz: The effect of visual and auditory stimuli upon resting ventilation in man (1987) 68:345

Shea, S.A., J. Walter, K. Murphy and A. Guz: Evidence for individuality of breathing patterns in resting healthy man (1987) 68:331

Shea, S.A., R.L. Horner, N.R. Banner, E. McKenzie, R. Heaton, M.H. Yacoub and A. Guz: The effect of human heart-lung transplantation upon breathing at rest and during sleep (1988) 72:131

Shea, S.A., *see* Benchetrit, G. (1989) 75:199

Shear, W.T., *see* Shannon, R. (1985) 60:193

Sheiban, M., *see* Cotton, D.J. (1988) 71:117

Shepard, J.W., Jr. and G.F. Dolan: Transpleural CO_2 diffusion in excised dog lungs (1983) 52:205

Sherpa, M.G., *see* Lahiri, S. (1983) 52:281

Shibata, H., *see* Holland, R.A.B. (1985) 59:71

Shih, T.-B., *see* Ingermann, R.L. (1983) 51:141

Shimura, S., C.J. Martin, E.S. Boatman and R. Dhand: A role for interstitial matrix in tissue tension of alveolar wall (1985) 62:293

Shirahata, M., *see* Andronikou, S. (1988) 72: 361

Shoemaker, V.H., *see* Schroter, R.C. (1987) 70:97
Sica, A.L., M.I. Cohen, D.F. Donnelly and H. Zhang: Hypoglossal motoneuron responses to pulmonary and superior laryngeal afferent inputs (1984) 56:339
Sica, A.L., M.I. Cohen, D.F. Donnelly and H. Zhang: Responses of recurrent laryngeal motoneurons to changes of pulmonary afferent inputs (1985) 62:153
Sica, A.L., *see* Donnelly, D.F. (1985) 61:69
Sieck, G.C., A. Mazar and M.J. Belman: Changes in diaphragmatic EMG spectra during hyperpneic loads (1985) 61:137
Sigger, J.N., *see* Harding, R. (1984) 57:47
Silbaugh, S.A., *see* Stengel, P.W. (1986) 63:129
Sillau, A.H., *see* Juarbe, C. (1988) 72:83
Simhai, B., *see* Oliven, A. (1988) 73:313
Simkiss, K.: Eggshell conductance – Fick's or Stefan's law? (1986) 65:213
Simonetti, O.P., *see* Chonan, T. (1988) 73:383
Sinclair, J.D., *see* Burr, D. (1988) 72:47
Sinclair, J.D., *see* Martin-Body, R.L. (1985) 61:105
Sinclair, J.D., *see* Martin-Body, R.L. (1987) 70:205
Sink, D.E., *see* Miles, D.S. (1983) 52:349
Sironi, S., *see* G. Citterio (1983) 51:259
Sittipong, R., *see* Rorie, D.K. (1988) 74:211
Skatrud, J.B., *see* Wilson, P.A. (1984) 55:103
Slutsky, A.S., *see* Solway, J. (1985) 60:267
Sly, P.D., *see* Bates, J.H.T. (1987) 70:301
Smeland, E.B., J.O. Owe and H.T. Andersen: Modification of the 'diving bradycardia' by hypoxia or exercise (1984) 56:245
Smith, C.A., G.S. Mitchell, L.C. Jameson, T.I. Musch and J.A. Dempsey: Ventilatory response of goats to treadmill exercise: Grade effects (1983) 54:331
Smith, C.A., *see* Bisgard, G.E. (1987) 69:245
Smith, L.G., *see* McMurray, R.G. (1985) 62:117
Smith, R.P., *see* Hill, N.S. (1987) 70:241
Smith, R.P., *see* Ou, L.C. (1983) 53:367
Sneyd, J.R., R.A.F. Linton and D.M. Band: Ventilatory effects of potassium during hyperoxia, normoxia and hypoxia in anaesthetized cats (1988) 72:59
Snyder, G.K., E.E. Wilcox and E.W. Burnham: Effects of hypoxia on muscle capillarity in rats (1985) 62:135
Snyder, G.K., R.L. Byers and S.R. Kayar: Effects of hypoxia on tissue capillarity in geese (1984) 58:151
Snyder, G.K., *see* Byers, R.L. (1984) 58:137
Snyder, G.K.: Respiratory adaptations in diving mammals (1983) 54:269
Soghikian, G.W., *see* Biewener, A.A. (1985) 61:185
Soler, M., *see* Badier, M. (1988) 73:1
Solway, J., N. Gavriely, A.S. Slutsky, T.H. Rossing, P. Drinker, A.F. Saari and J.M. Drazen: Effect of bias flow rate on gas transport during high-frequency oscillatory ventilation (1985) 60:267
Sorkness, R. and E. Vidruk: Reflex effects of isocapnic changes in ventilation on tracheal tone in awake dogs (1987) 69:161
Sorkness, R.L. and E.H. Vidruk: Ventilatory responses to hypoxia nullify hypoxic tracheal constriction in awake dogs (1986) 66:41
Sotherland, P.R., *see* Paganelli, C.V. (1988) 71:45
Sotherland, P.R.: The reliability of respiratory quotient measurements (1985) 60:387
Souhrada, J.F., D. Presley and M. Souhrada: Mechanisms of the temperature effect on airway smooth muscle (1983) 53:225
Souhrada, J.F., *see* Souhrada, M. (1983) 52:245
Souhrada, J.F., *see* Souhrada, M. (1985) 60:157
Souhrada, J.F., *see* Souhrada, M. (1987) 67:323
Souhrada, M. and J.F. Souhrada: A transient calcium influx into airway smooth muscle cells induced by immunization (1987) 67:323
Souhrada, M. and J.F. Souhrada: Sensitization-induced sodium influx in airway smooth muscle cells of guinea pigs (1985) 60:157
Souhrada, M., J.J. Klein, N. Berend and J.F. Souhrada: Topographical differences in the physiological response of canine airway smooth muscle (1983) 52:245
Souhrada, M., *see* Souhrada, J.F. (1983) 53:225
Soulard, C.D., B.P. Teisseire, L.J. Teisseire and R.A. Herigault: Consequences of an acute increase in P_{50} in anaesthetized guinea pigs (1983) 51:21
Soulard, C.D., *see* Teisseire, B.P. (1984) 58:335
Soulier, P., *see* Le Moigne, J. (1986) 66:341
Soust, M., A.M. Walker, F.E. Wilson and P.J. Berger: Origins and regional distribution of blood flow to the respiratory muscles in conscious sheep (1987) 67:283
Speck, D.F. and C.L. Webber, Jr.: Baroreceptor modulation of inspiratory termination by intercostal nerve stimulation (1983) 52:387

Speck, D.F. and C.L. Weber, Jr.: Effect of hypoxic, hyperoxic or hypercapnic ventilation on inspiratory termination in the cat (1985) 60:205

Springer, C., D.M. Cooper and K. Wasserman: Evidence that maturation of the peripheral chemoreceptors is not complete in childhood (1988) 74:55

St. John, W.M. and A. L Bianchi: Comparison of activities of medullary respiratory neurons in eupnea and apneusis (1983) 51:361

St. John, W.M. and D. Bartlett, Jr.: Comparison of phrenic motoneuron acitivity in eupnea and apneusis (1985) 60:347

St. John, W.M. and T.A. Bledsoe: Comparison of respiratory-related trigeminal, hypoglossal and phrenic activities (1985) 62:61

St. John, W.M., K.V. Knuth and K.E. Rist: Dynamic changes of hypoglossal and phrenic activities by hypoxia and hypercapnia (1984) 56:237

St. John, W.M., *see* Bartlett, D., Jr. (1986) 64:289

St. John, W.M., *see* Bartlett, D., Jr. (1988) 73:97

St. John, W.M., *see* Bennet, F.M. (1985) 61:153

St. John, W.M., *see* Daubenspeck, J.A. (1988) 73:87

St. John, W.M., *see* Hwang, J.-C., 341 (1984) 55:355

St. John, W.M., *see* Hwang, J.-C., 175 (1988) 73:189

St. John, W.M., *see* Ou, L.C. (1983) 54:343

St. John, W.M.: Influence of reticular mechanisms upon hypoglossal, trigeminal and phrenic activities (1986) 66:27

Stahel, C.D. and S.C. Nicol: Ventilation and oxygen extraction in the little penguin (*Eudyptula minor*), at different temperatures in air and water (1988) 71:387

Standaert, T.A., *see* Hlastala, M.P. (1985) 60:277

Standaert, T.A., *see* Jackson, J.C. (1988) 73:291

Stanescu, D.C., *see* Rodenstein, D.O. (1983) 52:217

Stanley, C., *see* Hochachka, P.W. (1983) 52:303

Stearns, R.C., G.M. Barnas, M. Walski and J.C. Brain: Deposition and phagocytosis of inhaled particles in the gas exchange region of the duck, *Anas platyrhynchos* (1987) 67:23

Steinbrook, R.A., S. Javaheri, R.A. Gabel, J.C. Donovan, D.E. Leith and V. Fencl: Respiration of chemodenervated goats in acute metabolic acidosis (1984) 56:51

Stengel, P.W. and S.A. Silbaugh: Mechanisms of gas loss from normal and hyperinflated excised guinea pig lungs (1986) 63:129

Stock, M.K. and J. Metcalfe: Stimulation of growth of the chick embryo by acute hyperoxia (1984) 58:351

Stock, M.K., D.L. Francisco and J. Metcalfe: Organ growth in chick embryos incubated in 40% or 70% oxygen (1983) 52:1

Stock, M.K., M.A. Asson-Batres and J. Metcalfe: Stimulatory and persistent effect of acute hyperoxia on respiratory gas exchange of the chick embryo (1985) 62:217

Stock, M.K., *see* Ingermann, R.L. (1983) 51:141

Stogryn, H.A.F., *see* England, S.J. (1986) 66:181

Stogryn, H.A.P., *see* England, S.J. (1985) 60:95

Stradling, J., *see* Warley, Q. (1989) 75:183

Stradling, J.R., *see* England, S.J. (1986) 66:327

Stradling, J.R., *see* Harding, R. (1986) 66:315

Strohl, K.P., S.B. Gottfried, W. van de Graaff, R.E. Wood and J.M. Fouke: Effects of sodium cyanide and nicotine on upper airway resistance in anesthetized dogs (1986) 63:161

Strohl, K.P., *see* Dimarco, A.F. (1984) 57:247

Strohl, K.P., *see* Hafer, C.E. (1987) 70:13

Strohl, K.P., *see* Haxhiu, M.A. (1984) 57:153

Strohl, K.P., *see* Haxhiu, M.A. (1984) 58:65

Strohl, K.P., *see* Olson, L.G. (1988) 71:147

Strohl, K.P., *see* Van Lunteren, E. (1983) 53:87

Strohl, K.P., *see* Wolfson, D.A. (1983) 53:273

Strong, E.B., *see* Adams, L. (1987) 70:343

Sugihara, S., *see* Knudson, R.J. (1983) 52:113

Sullivan, C., *see* England, S.J. (1985) 60:357

Sullivan, C.E., *see* McNamara, S.G. (1986) 65:315

Sullivan, K.J. and J.P. Mortola: Age related changes in the rate of stress relaxation within the rat respiratory system (1987) 67:295

Sullivan, L.P., *see* Widener, G. (1986) 65:341

Sumar-Kalinowski, J., *see* Hochachka, P.W. (1983) 52:303

Sutcliffe, A.M., *see* Lai-Fook, S.J. (1984) 55:223

Suzuki, S., *see* Sasaki, H. (1984) 56:21

Szeto, E., *see* McNamara, S.G. (1986) 65:315

Tabka, Z., A. Ben Jebria and H. Guenard: Effect of breathing dry warm air on respiratory water loss at rest and during exercise (1987) 67:115

Takagi, K., *see* Ito, M. (1985) 59:143

Takagi, K., *see* Ito, M. (1985) 61:43

Takano, N.: Reflex hypoxic drive to respiration during the menstrual cycle (1984) 56:229

Takishima, T., *see* Kakuta, Y. (1985) 60:9
Takishima, T., *see* Ohe, M. (1986) 63:177
Takishima, T., *see* Sasaki, H. (1984) 56:21
Tapper, S.S., *see* Maginiss, L.A. (1983) 53:15
Taylor, C.R., E.R. Weibel, R.H. Karas and H. Hoppeler: Adaptive variation in the mammalian respiratory system in relation to energetic demand: VIII. Structural and functional design principles determining the limits to oxidative metabolism (1987) 69:117
Taylor, C.R., R.H. Karas, E.R. Weibel and H. Hoppeler: Adaptive variation in the mammalian respiratory system in relation to energetic demand: II. Reaching the limits to oxygen flow (1987) 69:7
Taylor, C.R., *see* Conley, K.E. (1985) 62:273
Taylor, C.R., *see* Conley, K.E. (1987) 69:47
Taylor, C.R., *see* Karas, R.H, 65 (1987) 69:101
Taylor, C.R., *see* Weibel, E.R. (1983) 54:173
Taylor, C.R., *see* Weibel, E.R., 1 (1987) 69:81
Taylor, D.J., P.M. Matthews and G.K. Radda: Myoglobin-dependent oxidative metabolism in the hypoxic rat heart (1986) 63:275
Taylor, E.W., *see* Butler, P.J. (1983) 53:109
Taylor, R.F., *see* Dupré, R. K (1985) 59:231
Tazawa, H., A.H.J. Visschedijk and J. Piiper: Blood gases and acid-base status in chicken embryos with naturally varying egg shell conductance (1983) 54:137
Tazawa, H., A.H.J. Visschedijk, J. Wittmann and J. Piiper: Gas exchange, blood gases and acid base status in the chick before, during and after hatching (1983) 53:173
Tazawa, H. and J. Piiper: Carbon dioxide dissociation and buffering in chicken blood during development (1984) 57:123
Tazawa, H., S.-i. Nakazawa, A. Okuda and G.C. Whittow: Short-term effects of altered shell conductance on oxygen uptake and hematological variables of late chicken embryos (1988) 74:199
Tazawa, H., *see* Okuda, A. (1988) 74:187
Tazawa, H., *see* Olszowka, A.J. (1988) 71:315
Tazawa, H., *see* Visschedijk, A.H.J. (1985) 59:339
Tchernigovtzeff, C., *see* Toulmond, A. (1984) 57:349
Teillac, A., *see* Becquemin, M.H. (1987) 67:147
Teisseire, B.P., C.D. Soulard, L.J. Teisseire, R.A. Herigault and D.N. Laurent: Induced low Pso in anesthetized rats: Blood gas, circulatory and metabolic adjustments (1984) 58:335
Teisseire, B.P., *see* Soulard, C.D. (1983) 51:21
Teisseire, L.J., *see* Soulard, C.D. (1983) 51:21
Teisseire, L.J., *see* Teisseire, B.P. (1984) 58:335
Tenney, S.M., *see* Birchard, G.F. (1984) 57:341
Tenney, S.M., *see* Birchard, G.F. (1986) 66:225
Tenney, S.M., *see* Boggs, D.F. (1984) 58:245
Tenney, S.M., *see* Fordyce, W.E. (1984) 58:207
Tenney, S.M., *see* Leiter, J.C. (1986) 64:267
Tenney, S.M., *see* Leiter, J.C. (1986) 65:365
Tenney, S.M., *see* Mortola, J.P. (1986) 63:267
Tenney, S.M., *see* Ou, L.C. (1983) 54:343
Tenney, S.M., *see* Ou, L.C. (1984) 58:161
Tenney, S.M., *see* Ou, L.C. (1985) 62:85
Tenney, S.M., *see* Ou, L.C. (1986) 64:81
Tenney, S.M.: Oxygen supply and limiting oxygen pressures in an insect larva (1985) 60:121
Teppema, L.J., F. Rochette and M. Demedts: Ventilatory response to carbonic anhydrase inhibition in cats: effects of acetazolamide in intact vs peripherally chemodenervated animals (1988) 74:373
Teppema, L.J., P.W.J.A. Barts and J.A.M. Evers: Effects of metabolic arterial pH changes on medullary ecf, pH, csf pH and ventilation in peripherally chemodenervated cats with intact blood–brain barrier (1984) 58:123
Teppema, L.J., P.W.J.A. Barts and J.A.M. Evers: The effect of the phase relationship between the arterial blood gas oscillations and central neural respiratory activity on phrenic motoneurone output in cats (1985) 61:301
Teppema, L.J., P.W.J.A. Barts, H.Th. Folgering and J.A.M. Evers: Effects of respiratory and (isocapnic) metabolic arterial acid base disturbances on medullary extracellular fluid pH and ventilation in cats (1983) 53:379
Terra-Filho, J., J.C. Manco, L. Gallo, Jr., J.A. Marin-Neto and B.C. Maciel: Effects of intravenous atropine on static P-V curves of the lung in normal man (1987) 70:265
Tetens, V. and G. Lykkeboe: Acute exposure of rainbow trout to mild and deep hypoxia: O_2 affinity and O_2 capacitance of arterial blood (1985) 61:221
Thliveris, J.A., *see* Faridy, E.E. (1987) 68:269
Thliveris, J.A., *see* Faridy, E.E. (1988) 72:195
Thliveris, J.A., *see* Faridy, E.E. (1988) 73:225
Thliveris, J.A., *see* Faridy, E.E. (1989) 75:309

Thomas, S., B. Fievet, G. Claireaux and R. Motais: Adaptive respiratory responses of trout to acute hypoxia. I. Effects of water ionic composition on blood acid-base status response and gill morphology (1988) 74:77

Thomas, S., J. Poupin, G. Lykkeboe and K. Johansen: Effects of graded exercise on blood gas tensions and acid-base characteristics of rainbow trout (1987) 68:85

Thomas, S., *see* Claireaux, G. (1988) 74:91

Thomas, S., *see* Fievet, B. (1988) 74:99

Thompson, D., *see* Powers, S.K. (1987) 70:251

Thron, C.D., *see* Hill, N.S. (1987) 70:241

Tierney, J.F., *see* Weir, E.K. (1983) 53:295

Toews, D.P. and S. Kirby: The ventilatory and acid-base physiology of the toad, *Bufo marinus*, during exposure to environmental hyperoxia (1985) 59:225

Toews, D.P., *see* Heisler, N. (1988) 71:227

Tøien, Ø., C.V. Paganelli, H. Rahn and R.R. Johnson: Diffusive resistance of avian eggshell pores (1988) 74:345

Tomita, T., *see* Ito, M. (1985) 59:143

Tomita, T., *see* Ito, M. (1985) 61:43

Topor, Z.L., *see* West, N.H. (1987) 70:377

Torrance, R.W., *see* Nye, P.C.G. (1983) 51:109

Toulmond, A. and C. Tchernigovtzeff: Ventilation and respiratory gas exchanges of the lugworm *Arenicola marina* (L.) as functions of ambient P_{O_2} (20-700 torr) (1984) 57:349

Toyofuku, T., K. Kubo and T. Kobayashi: The effect of dextran solution on pulmonary plasma-lymph barrier in awake sheep (1987) 68:239

Tramezzani, J.H., *see* Chiocchio, S.R. (1984) 57:235

Trenchard, D., N.J.W. Russell and H.E. Raybould: Non-myelinated vagal lung receptors and their reflex effects on respiration in rabbits (1984) 55:63

Trenchard, D.: Chemoreflexes in rabbits (1986) 66:367

Trenchard, D.: CO_2/H^+ receptors in the lungs of anaesthetized rabbits (1986) 63:227

Trippenbach, T., *see* Muzzin, S. (1989) 75:157

Truog, W.E., *see* Jackson, J.C. (1988) 73:291

Trzebski, A., *see* Lipski, J. (1984) 57:279

Tsubone, H., Nasal 'flow' receptors of the rat (1989) 75:51

Tsubone, H., O.P. Mathew and G. Sant'Ambrogio: Respiratory activity in the superior laryngeal nerve of the rabbit (1987) 69:195

Tsubone, H., *see* Sant'Ambrogio, F.B. (1988) 71:343

Tucker, A., J.T. Reeves, D. Robertshaw and R.F. Grover: Cardiopulmonary response to acute altitude exposure: Water loading and deni trogenation (1983) 54:363

Tully, A., *see* Brancatisano, A. (1987) 67:53

Turek, Z., *see* Egginton, S. (1988) 74:383

Twort, C.H.C. and I.R. Cameron: Effects of P_{CO_2}, pH and extracellular calcium on contraction of airway smooth muscle from rats (1986) 66:259

Tyce, G.M., *see* Rorie, D.K. (1988) 74:211

Tyler, D.C., M. Nessly and F.W. Cheney, Jr.: Reflex responses to positive end-expiratory pressure (1984) 56:261

Tyndale-Biscoe, C.H., *see* Holland, R.A.B. (1988) 73:69

Uhlmann, E., *see* Hoppler, H. (1987) 69:27

Uhlmann, E., *see* Hudlicka, O. (1988) 72:1

Ultman, J.S., *see* Drechsler, D.M. (1984) 56:37

Ultman, J.S., *see* Reisfeld, B. (1988) 71:269

Vago, P., *see* Ramonatxo, M. (1986) 65:351

Vaida, P., *see* Guenard, H. (1987) 70:113

Van Beek, J.H.G.M., A. Berkenbosch, J. de Goede and C.N. Olievier: Effects of brain stem hypoxaemia on the regulation of breathing (1984) 57:171

Van Beek, J.H.G.M., A. Berkenbosch, J. de Goede and C.N. Olievier: Influence of peripheral O_2 tension on the ventilatory response to CO_2 in cats (1983) 51:379

Van Beek, J.H.G.M., A. Berkenbosch, J. de Goede and C.N. Olievier: Response of vertebral and carotid blood flow to isocapnic changes in end-tidal oxygen tension (1986) 63:65

Van Beek, J.H.G.M., *see* Berkenbosch, A. (1984) 55:95

Van de Graaff, W., *see* Strohl, K.P. (1986) 63:161

Van de Graaff, W.B., *see* Haxhiu, M.A. (1984) 57:153

Van de Graaff, W.B., *see* Van Lunteren, E. (1983) 53:87

Van de Woestijne, K.P., *see* Gustin, P. (1987) 69:299

Van der Zee, H., J.A. Cooper, T.S. Hakim and A.B. Malik: Alterations in pulmonary fluid balance induced by positive end-expiratory pressure (1986) 64:125

Van Der Zee, H., R. Bizios and A.B. Malik: Effects of high frequency ventilation on lung lymph dynamics and prostaglandin generation (1985) 61:31

Van Liew, H.D., G.N. Lapennas and K.R. Murray: Influence of lung volume on the mixing defect for an inert gas (1986) 66:355

Van Lunteren, E., J.S. Arnold and N.S. Cherniack: Vagal influences on parasternal intercostal muscle inspiratory shortening during hypercapnia and airway occlusion (1988) 71:201

Van Lunteren, E., M.A. Haxhiu and N.S. Cherniack: Stimulation of respiratory changes in alae nasi length by chemoreceptor activation (1986) 63:361

Van Lunteren, E., N.R. Prabhakar, N.S. Cherniack, M.A. Haxhiu and T.E. Dick: Inhibition of expiratory muscle EMG and motor unit activity during augmented breaths in cats (1988) 72:303

Van Lunteren, E., *see* Chandler Deal, E., Jr. (1987) 69:335

Van Lunteren, E., *see* Haxhiu, M.A. (1984) 57:153

Van Lunteren, E., *see* Haxhiu, M.A. (1984) 58:65

Van Lunteren, E., *see* Haxhiu, M.A. (1986) 64:351

Van Lunteren, E., *see* Haxhiu, M.A. (1987) 70:183

Van Lunteren, E., *see* Overholt, J.L. (1988) 74:299

Van Lunteren, E., W.B. van de Graaff, D.M. Parker, K.P. Strohl, J. Mitra, J. Salamone and N.S. Cherniack: Activity of upper airway muscles during augmented breaths (1983) 53:87

Van Muylem, A., *see* Paiva, M. (1984) 56:309

Van Muylem, A., *see* Paiva, M. (1986) 63:327

Van Muylem, A., *see* Paiva, M. (1988) 72:257

Van Reempts, P., *see* Moriette, G. (1985) 62:387

Van Vliet, B.N., *see* West, N.H. (1987) 70:377

Van Zomeren, B.C., *see* De Groodt, E.G. (1986) 65:139

Varene, N., *see* Guenard, H. (1987) 70:113

Varène, P., *see* Choukroun, M.-L. (1989) 75:255

Varène, P., *see* Ferrus, L. (1984) 56:11

Venugopalan, C.S., S.I. Said and J.M. Drazen: Effect of vasoactive intestinal peptide on vagally mediated tracheal pouch relaxation (1984) 56:205

Verbanck, S. and M. Paiva: Effective axial diffusion in an expansile alveolar duct model (1988) 73:273

Verbanck, S., *see* Paiva, M. (1988) 72:257

Vidic, B., *see* Lichtenbeld, H. (1989) 75:129

Vidruk, E., *see* Sorkness, R. (1987) 69:161

Vidruk, E.H., *see* Engwall, M.J.A. (1988) 74:335

Vidruk, E.H., *see* Mitchell, G.S. (1987) 68:319

Vidruk, E.H., *see* Olson, E.B., Jr. (1983) 54:79

Vidruk, E.H., *see* Sorkness, R.L. (1986) 66:41

Vinitski, S., *see* Morgan, W.K.C. (1984) 56:327

Visschedijk, A.H.J. and H. Rahn: Replacement of diffusive by convective gas transport in the developing hen's egg (1983) 52:137

Visschedijk, A.H.J., H. Tazawa and J. Piiper: Variability of shell conductance and gas exchange of chicken eggs (1985) 59:339

Visschedijk, A.H.J., *see* Tazawa, H. (1983) 53:173

Visschedijk, A.H.J., *see* Tazawa, H. (1983) 54:137

Voelkel, N.F., *see* Walker, B.R. (1984) 56:45

Vollmer, W.M., *see* Wall, M.A. (1987) 69:287

Wach, R.A., *see* Bee, D. (1984) 56:91

Wagoner, R., *see* MacIntyre, N.R. (1986) 63:201

Wahrenbrock, E.A., *see* Parkos, C.A. (1987) 67:197

Waldron, M.A. and J.T. Fisher: Differential effects of CO_2 and hypoxia on bronchomotor tone in the newborn dog (1988) 72:271

Waldrop, T.G., D.C. and M.C. Henderson: Effects of hypothalamic lesions on the cardiorespiratory responses to muscular contraction (1986) 66:215

Waldrop, T.G., D.C. Mullins and D.E. Millhorn: Control of respiration by the hypothalamus and by feedback from contracting muscles in cats (1986) 64:317

Waldrop, T.G., F.L. Eldridge and D.E. Millhorn: Inhibition of breathing after stimulation of muscle is mediated by endogenous opiates and GABA (1983) 54:211

Waldrop, T.G., K.J. Rybicki, M.P. Kaufman and G.A. Ordway: Activation of visceral thin fiber afferents increases respiratory output in cats (1984) 58:187

Waldrop, T.G., M.C. Henderson, G.A. Iwamoto and J.H. Mitchell: Regional blood flow responses to stimulation of the subthalamic locomotor region (1986) 64:93

Waldrop, T.G., *see* Eldridge, F.L. (1983) 53:239

Waldrop, T.G., *see* Eldridge, F.L. (1985) 59:313

Waldrop, T.G., *see* Millhorn, D.E. (1983) 51:219
Waldrop, T.G., *see* Millhorn, D.E. (1984) 57:331
Waldrop, T.G., *see* Millhorn, D.E. (1985) 62:79
Waldrop, T.G.: Respiratory responses to chemical activation of left ventricular receptors (1986) 63:383
Walker, A.M., *see* Berger, P.J. (1986) 65:55
Walker, A.M., *see* Soust, M. (1987) 67:183
Walker, B.R., N. Berend and N.F. Voelkel: Comparison of muscular pulmonary arteries in low and high altitude hamsters and rats (1984) 56:45
Wall, M.A., M.C. Misley, A.C. Brown, W.M. Vollmer and A.S. Buist: Relationship between maldistribution of ventilation and airways obstruction in children with asthma (1987) 69:287
Walski, M., *see* Stearns, R.C. (1987) 67:23
Walter, J., *see* Shea, S.A. (1987) 68:331
Walter, J., *see* Shea, S.A. (1987) 68:345
Wang, N., R.B. Banzett, J.P. Butler and J.J. Fredberg: Bird lung models show that convective inertia effects inspiratory aerodynamic valving (1988) 73:111
Wang, W.F., *see* Green, J. (1988) 74:239
Wangensteen, D., *see* Bachofen, H. (1983) 52:41
Ward, D.K., *see* Bartlett, D., Jr. (1987) 70:173
Ward, R.A., *see* Bamford, O.S. (1986) 66:387
Warley, A., M. Clarke, T. Phillips and J. Stradling: Ventilatory response to an inhaled constant CO_2 load and added dead space in healthy men, awake and asleep (1989) 75:183
Wasser, J.S. and D.C. Jackson: Acid-base balance and the control of respiration during anoxic and anoxic-hypercapnic gas breathing in turtles (1988) 71:213
Wasser, J.S., *see* Prange, H.D. (1985) 62:95
Wasserman, K., *see* Springer, C. (1988) 74:55
Watson, J.W., A.C. Jackson and J.R. Gillespie: CO_2 elimination and airway opening pressure during high frequency oscillation in dogs (1984) 58:235
Webber, C.L., Jr., *see* Speck, D.F. (1983) 52:387
Weber, C.L., Jr., *see* Speck, D.F. (1985) 60:205
Weber, J., *see* Bachofen, H. (1983) 52:41
Weber, K.C., *see* Frazer, D.G. (1985) 61:277
Weber, M.E., *see* Menon, A.S. (1984) 55:255
Weber, R.E., M.E. Heath and F.N. White: Oxygen binding functions of blood and hemoglobin from the Chinese pangolin, *Manis pentadactyla*: Possible implications of burrowing and low body temperature (1986) 64:103
Weber, R.E., *see* Jensen, F.B. (1983) 51:291
Weber, R.E., *see* Malte, H. (1985) 62:359
Weber, R.E., *see* Malte, H. (1987) 70:221
Weber, R.E., T. Kleinschmidt and G. Braunitzer: Embryonic pig hemoglobins Gower I ($\zeta_2\epsilon_2$), Gower II ($\alpha_2\epsilon_2$), Heide I ($\zeta_2\vartheta_2$) and Heide II ($\alpha_2\vartheta_2$): oxygen-binding functions related to structure and embryonic oxygen supply (1987) 69:347
Wegner, C.D., A.C. Jackson, J.D. Berry and J.R. Gillespie: Dynamic respiratory mechanics in monkeys measured by forced oscillations (1984) 55:47
Wei-Yang, L., *see* Lei, L. (1989) 75:65
Weibel, E.R., C.R. Taylor, H. Hoppeler and R.H. Karas: Adaptive variation in the mammalian respiratory system in relation to energetic demand: I. Introduction to problem and strategy (1987) 69:1
Weibel, E.R., C.R. Taylor, J.J. O'Neil, D.E. Leith, P. Gehr, H. Hoppeler, V. Langman and R.V. Baudinette: Maximal oxygen consumption and pulmonary diffusing capacity: A direct comparison of physiologic and morphometric measurements in canids (1983) 54:173
Weibel, E.R., L.B. Marques, M. Constantinopol, F. Doffey, P. Gehr and C.R. Taylor: Adaptive variation in the mammalian respiratory system in relation to energetic demand: VI. The pulmonary gas exchanger (1987) 69:81
Weibel, E.R., *see* Bachofen, H. (1983) 52:41
Weibel, E.R., *see* Conley, K.E. (1985) 62:273
Weibel, E.R., *see* Conley, K.E. (1987) 69:47
Weibel, E.R., *see* Karas, R.H. (1987) 69:101
Weibel, E.R., *see* Kayar, S.R. (1986) 64:1
Weibel, E.R., *see* Schürch, S. (1985) 62:31
Weibel, E.R., *see* Taylor, C.R., 7 (1987) 69:117
Weil, J.V., *see* Douglas, N.J. (1983) 51:209
Weil, J.V., *see* Huang, S.Y. (1984) 57:377
Weil, J.V., *see* Huang, S.Y. (1988) 72:315
Weil, J.V., *see* Moore, L.G. (1987) 70:195
Weinberger, S.E., *see* Lahive, K.C. (1988) 72:163
Weinstein, Y., R.A. Ackerman and F.N. White: Influence of temperature on the CO_2 dissociation curve of the turtle *Pseudemys scripta* (1986) 63:53
Weir, E.K., J.F. Tierney, E. Chesler, L.J. Lundquist and P.R. Craddock: Zymosan activation of plasma reduces hypoxic pulmonary vasoconstriction (1983) 53:295
Weiss, J.W., *see* Lahive, K.C. (1988) 72:163

Weitz, H., *see* Marconi, C. (1988) 74:1
Werlen, C., P. Py and P. Haab: Alveolar-arterial equilibration in the lung of sheep (1984) 55:205
West, J.B., Rate of ventilatory acclimatization to extreme altitude (1988) 74:323
West, J.B.: Climbing Mt. Everest without oxygen: An analysis of maximal exercise during extreme hypoxia (1983) 52:265
West, N.H., Z.L. Topor and B.N. Van Vliet: Hypoxemic threshold for lung ventilation in the toad (1987) 70:377
Western, P.J. and J.M. Patrick: Effects of focusing attention on breathing with and without apparatus on the face (1988) 72:123
Weyne, J., *see* Javaheri, S. (1983) 51:31
Weyne, J., *see* Javaheri, S. (1984) 57:365
Weyne, J., *see* Javaheri, S. (1984) 58:101
Wheatly, M.G., H. Hōbe and C.M. Wood: The mechanisms of acid-base and ionoregulation in the freshwater rainbow trout during environmental hyperoxia and subsequent normoxia. II. The role of the kidney (1984) 55:155
Wheatly, M.G., *see* Hōbe, H. (1984) 55:139
Wheatly, M.G., *see* Wood, C.M. (1984) 55:175
Whetstone, R.M., *see* Fordyce, W.E. (1987) 68:145
Whitcomb, M.E., *see* Dorinsky, P.M. (1985) 62:231
White, D.P., *see* Douglas, N.J. (1983) 51:209
White, F.N., *see* Weber, R.E. (1986) 64:103
White, F.N., *see* Weinstein, Y. (1986) 63:53
Whitelaw, W.A., J.-Ph. Derenne, S. Noble and B. McBride: Similarities between behavior of respiratory muscles in breath-holding and in elastic loading (1988) 72:151
Whitelaw, W.A., *see* Derenne, J.-Ph. (1986) 65:303
Whittembury, J., *see* Bonavia, D. (1985) 62:125
Whittembury, J., *see* Winslow, R.M. (1985) 61:197
Whittow, G.C., *see* Tazawa, H. (1988) 74:199
Wickham, P.J.D., *see* Harding, R. (1984) 57:47
Widener, G., L.P. Sullivan, R.L. Clancy and N.C. Gonzalez: Renal compensation of hypercapnia in prolonged hypoxia (1986) 65:341
Wiese, G., *see* Kraemer, R. (1983) 52:229
Wieser, W.: A distinction must be made between the ontogeny and the phylogeny of metabolism in order to understand the mass exponent of energy metabolism (1984) 55:1
Wilcox, E.E., *see* Snyder, G.K. (1985) 62:135
Wildeboer-Venema, F.: Influence of nitrogen, oxygen, air and alveolar gas upon surface tension of lung surfactant (1984) 58:1
Wildevuur, Ch.R.H., *see* Ennema, J.J. (1984) 58:29
Wilkening, R.B., *see* Accurso, F.J. (1986) 63:43
Wilkes, P.R.H., *see* Booth, C.E. (1984) 58:359
Wilkinson, M.H., *see* Berger, P.J. (1986) 65:55
Willford, D.C. and E.P. Hill: Modest effect of temperature on the porcine oxygen dissociation curve (1986) 64:113
Willshaw, P., *see* Chiocchio, S.R. (1984) 57:235
Wilson, C.B., *see* Jackson, J.C. (1988) 73:291
Wilson, F., *see* Berger, P.J. (1986) 65:55
Wilson, F.E., *see* Soust, M. (1987) 67:283
Wilson, L.B., *see* Chapleau, M.W. (1988) 71:185
Wilson, P.A., J.B. Skatrud and J.A. Dempsey: Effects of slow wave sleep on ventilatory compensation to inspiratory elastic loading (1984) 55:103
Winning, A.J., *see* Hamilton, R.D. (1987) 67:159
Winning, A.J., *see* Hamilton, R.D. (1988) 73:145
Winslow, N.J., *see* Winslow, R.M. (1985) 61:197
Winslow, R.M., C. Monge C., N.J. Winslow, C.G. Gibson and J. Whittembury: Normal whole blood Bohr effect in Peruvian natives of high altitude (1985) 61:197
Wise, M.E., *see* De Groodt, E.G. (1986) 65:139
Wittmann, J., *see* Tazawa, H. (1983) 53:173
Woakes, A.J., *see* Butler, P.J. (1987) 69:387
Woldenberg, M.J., *see* Horsfield, K. (1986) 63:97
Woldenberg, M.J., *see* Horsfield, K. (1986) 65:245
Wolfson, D.A., K.P. Strohl, A.F. Dimarco and M.D. Altose: Effects of an increase in end-expiratory volume on the pattern of thoracoabdominal movement (1983) 53:273
Wood, C.M., M.G. Wheatly and H. Hōbe: The mechanisms of acid-base and ionoregulation in the freshwater rainbow trout during environmental hyperoxia and subsequent normoxia. III. Branchial exchanges (1984) 55:175
Wood, C.M., *see* Hōbe, H. (1984) 55:139
Wood, C.M., *see* Wheatly, M.G. (1984) 55:155
Wood, G.A. and R. Hardin: The effects of pentobarbitone, diazepam and alcohol on oral breathing in neonatal and mature sheep (1989) 75:89
Wood, G.A., *see* Harding, R. (1987) 68:177
Wood, L.D.H., *see* Mayers, I. (1987) 69:149
Wood, R.E., *see* Fitch, N.A. (1984) 57:201
Wood, R.E., *see* Strohl, K.P. (1986) 63:161

Wood, S.C., *see* Burggren, W.W. (1987) 70:73
Woodall, D.L. and O.P. Mathew: Effect of upper airway pressure pulses on breathing pattern (1986) 66:71
Woolcock, A.J., *see* Armour, C.L. (1984) 58:223
Wright, A.J.A., *see* Hudlicka, O. (1988) 72:1

Xu, L. and J.P. Mortola: Development of the chick embryo: effects of egg mass (1988) 74:177

Yacoub, M.H., *see* Shea, S.A. (1988) 72:131
Yamaguchi, K., J. Glahn, P. Scheid and J. Piiper: Oxygen transfer conductance of human red blood cells at varied pH and temperature (1987) 67:209
Yamaguchi, K., M.L. Glass, P. Scheid and J. Piiper: Oxygen transfer kinetics of red blood cells of the turtle *Pseudemys scripta elegans* (1989) 75:371
Yamaguchi, K., *see* Hook, C. (1988) 72:65
Yang, Y.J., *see* Green, J. (1988) 74:239
Yernault, J.C., *see* Paiva, M. (1984) 56:309
Yernault, J.C., *see* Paiva, M. (1986) 63:327
Younes, M., *see* Gallagher, C.G. (1987) 68:137
Young, A., *see* Moore, L.G. (1987) 70:195
Young, P., *see* Moore, L.G. (1987) 70:195
Yu, J., J.C.G. Coleridge and H.M. Coleridge: Influence of lung stiffness on rapidly adapting receptors in rabbits and cats (1987) 68:161
Yu, L.K.H., L.-Y. Lee and D.T. Frazier: Effects of bronchoconstriction on breathing during normoxia and hypoxia in anesthetized cats (1984) 57:31

Zamel, D., M. Revow and S.J. England: Expiratory airflow patterns and gas exchange in the newborn infant, results of model simulations (1989) 75:19
Zehnder, M., *see* Kraemer, R. (1986) 65:127
Zeltner, T.B. and P.H. Burri: The postnatal development and growth of the human lung. II. Morphology (1987) 67:269
Zeltner, T.B., J.H. Caduff, P. Gehr, J. Pfenninger and P.H. Burri: The postnatal development and growth of the human lung. I. Morphometry (1987) 67:247
Zhang, H., *see* Donnelly, D.F. (1985) 61:69
Zhang, H., *see* Sica, A.L. (1984) 56:339
Zhang, H., *see* Sica, A.L. (1985) 62:153
Zin, W.A., *see* Caldeira, M.P.R. (1988) 73:43
Zinman, R. and C. Gaultier: Abdominothoracic configuration and maximal static pressures in children (1984) 55:39
Zinman, R. and C. Gaultier: Maximal static pressures and lung volumes in young female swimmers (1986) 64:229
Zinman, R., *see* Gaultier, C. (1983) 51:45
Zocchi, L., *see* Agostoni, E. (1987) 69:369
Zocchi, L., *see* Agostoni, E. (1989) 75:105
Zocchi, L., *see* Agostoni, E. (1989) 75:117
Zocchi, L., *see* Agostoni, E. (1989) 75:357
Zwillich, C.W., *see* Douglas, N.J. (1983) 51:209

SUBJECT INDEX

Respiration Physiology Cumulative Index Vols. 51–75

Sarah Dejours

Abdomen, *see also* Expiration, Muscle, respiratory
Afferent neurons, pneumotaxic center (cat) 52:85; Muscles, mechanical role, posture (human) 53:341; Small expiratory resistive loads (human) 61:369; Posture, muscle use (dog) 67:311; Muscles, anesthesia, posture, hypercapnia (dog) 70:159; Muscles, length change, supine dog 73:31; Expiration posture (human) 74:151

Acceleration
Gravity: Ventilation, hypercapnia (human) 62:141; Hyperventilation, brain perfusion 69:237; Ventilatory response CO_2, posture (human) 71:247
Of respired air, index neuromuscular output (human) 71:117

Acclimation, *see also* High altitude
Hypoxia: 96 hr (sheep) 59:197; 5 min (human) 60:227; Critical P_{O_2}, confined atmosphere, CO_2 (rat) 62:105; Prolonged, acid-base status, hypercapnia (rat) 64:213, 65:331,341; And carotid body hypercapnia (goat) 65:113; Serotonin-depleted rat 69:227
Temperature: O_2 transport (carp) 52:165; Intra-RBC acid-base, nucleosides (carp) 54:145; Cold, myocardial capillarity, growing guinea pig 59:1; Cold (guinea pig) 61:357

Aeration
Chick shell membranes 71:101

Aerodynamics, *see* Valving, inspiratory

Acid-base status: CSF, *see* Cerebrospinal fluid

Acid-base status: extracellular, air-breathing poikilotherms
Submerged, cold, anoxic turtle 53:187; Hyperoxic toad 59:225; Lactate infusion (lizard) 60:253; Hyperthermia, hypercapnia (turtle) 67:37; Anoxic, anoxic-hypercapnic turtle 71:213

Acid-base status: extracellular, homeotherms
Bird: Variable chick shell H_2O conductance 54:137; Hypoxia tolerance (duck) 67:1; CO_2 breathing (duck) 68:189
Mammal: Metabolic acidosis (dog) 54:241; Graded exercise (goat) 54:331; pHa servo-controlled ventilator simulation (dog) 58:345; Prolonged hypoxia, effects hypercapnia (rat) 64:213, 65:341; Anesthesia, exercise (rat) 65:85; Disturbed, ventilatory responses (cat) 67:69; pH effect O_2 transfer RBC (human) 67:209; Rapid alveolar gas composition change (dog) 68:251
Mammal, brain: Respiratory, metabolic, pHa changes, chemodenervation (cat) 53:379, 55:193, 58:123, 70:37

Acid-base status: extracellular, water breathers, *see also* Acid-base status: temperature effects
Exercise, tench 51:291, trout 51:303, 68:85, Acclimation temperature, RBC effects (carp) 54:145; Hyperoxic trout 55:139,155, 175; blue crab 58:359; pH, ventilatory regulation (crayfish) 65:235; Circadian rhythm (crayfish) 69:359; Hyperoxia-induced hypercapnia (elasmobranch) 71:227; Intertidal rockpool air-breathing teleost (*Blennius*) 71:355; Acute hypoxia (trout) 77:77,91,99

Acid-base status: intracellular
Homeotherms: pH, HCO_3^-, hypocapnia, muscle (rat) 55:121; Catecholamine, ion exchange, myocardium (rabbit) 56:289; Muscle pH, prolonged hypoxia (rat) 65:331; RBC, pH effect O_2 transfer (human) 67:209
Poikilotherms: Cold, submerged, anoxic turtle 53:187
Water breathers: RBC, acclimation temperature (carp) 54:145; Hyperoxic trout 55:139; RBC, hypoxia (trout) 71:69, 74:91,99; Adrenergic pH regulation RBC (salmon) 74:65

Acid-base status: temperature effects
General: Constant relative alkalinity or α-imidazole control: Heterothermic ground squirrel 57:307; Hypothermic cat 58:295; Locally "inactivated" imidazole, central chemoreceptor response CO_2 (rabbit) 64:161
Air-breathing poikilotherms: Submerged, cold, anoxic turtle 53:187; Lactate infusion (lizard) 60:253
Homeotherms: Heterothermic ground squirrel 57:307; Hypothermic cat 58:295
Water breathers: Acclimation temperature, RBC factors (carp) 54:145

Acidosis, metabolic
Air-breathing poikilotherms: Winter submerged turtle 53:15; Lactate infusion (lizard) 60:253
Homeotherms: Ventilation, intact, chemodenervated rabbit 54:97; Ventilation (dog) 54:241; Acute, peripheral chemodenervation (goat) 56:51; K^+-depleted rat 57:23
Water breathers: exercise (trout) 51:303; Acute hypoxia (trout) 74:77,91,99

Acidosis, respiratory
Brain surface, asphyxia (dog) 51:31; Fetal surfactant synthesis 57:213; CSF, anion transport blocker, HCO_3^- (dog) 57:365; Acute, amiloride, CSF $[HCO_3^-]$ (dog) 58:101; Chronic hypercapnia (dog) 58:377; Skeletal muscle O_2 (cat) 70:143

Adaptation
Mammalian respiratory system, energetic demand 69:1–127

Adenosine
Glomectomy, hypoxia (cat) 57:331; Chorioallantoic membrane angiogenesis (chick) 71:33; Ventilation, hypoxia, hypercapnia, chemodenervation (rat) 72:47; Antagonist, alae nasi, diaphragm activity (human) 72:163

Adenosine triphosphate (ATP)
Lung artery constriction, hypoxia, glucose depletion (rabbit) 63:177

Adolescence, *see also* Life stage
Stature, lung volumes (human) 65:139; Breathing pattern, ventilation, exercise, trained swimmers 65:351

Adrenal gland
Glucose stimulation chemoreceptors, baroreceptors (cat, rat, dog) 72:347

Adrenergic mechanisms, *see* Autonomic nervous system

Aerosol, lung
Exercise, smoking 56:327; Particle phagocytosis, duck 67:23; Airspace dimension (dog) 67:85; Particle deposition, clearance (nonsmokers) 67:147; Small-particle local anesthetic to alveoli (dog) 67:159; ^{99m}Tc-DTPA clearance (sheep) 72:375

Age, *see also* Life stage
V_T (rat) 61:105; Lung distensibility, adult human 65:1; Trachea smooth muscle, drugs (hamster) 66:157; RBC, O_2-Hb binding 68:215

Air bladder
Primitive lung Amia calva 59:213

Air convection requirement
Penguin 71:387

Airflow, *see also* Neurons, afferent, sensory, Valving, inspiratory
Low density gas breathing, vesicular lung sounds (human) 60:145; Palate, panting, feeding (dog) 61:185; Breathing cost, cystic fibrosis 65:257; Laminar, nonlaminar, collateral airways, inhomogeneous inflation (dog lung) 74:253; Patterns, expiration, newborn, model (human) 75:19

Air sac
Pressure loaded, breathing pattern (hen) 58:197; Gas composition, altered dead space volume (goose) 66:109

Airways, *see also* Asthma, Bronchi, Emphysema, Larynx, Mechanics of breathing, Morphometry, Resistance, Trachea, Vagus, Valving, inspiratory
General: Cold air breathing (cat) 54:41; Cardiogenic mixing (human) 56:37; Aerosol deposition, smoking, exercise 56:327; Temperature, contraction (human) 57:269; Opening pressure, CO_2 output, HFO (dog) 58:235; Breathing pattern, SO_2 block (rabbit) 59:169; Reactivity, mucus, methacholine effect (dog) 62:47; Inhaled particle clearance (non-smokers) 67:147; Dilatation, vagal blockade (human) 70:265; Bronchomotor tone, hypercapnia, hypoxia, vagotomy, newborn dog 72:271; Vagus myelinated, nonmyelinated, motor stimulation, pharmacology (cat, rabbit) 74:265
Closure, occlusion, obstruction: Newborn rat 51:1; Trapped gas, low volume breathing (human) 51:63; Marathon (human) 52:349; Lung sounds, small-airway disease (smokers) 53:203; Contractility, cooled, warmed smooth muscle (guinea pig) 53:225; Gas trapping, regional differences, rat lung 55:309; Gas loss, hyperinflated lung (guinea pig) 63:129; Dilator muscle, larynx cooling (dog) 66:61; Maldistribution ventilation, asthmatic child 69:287; Nonmuscular factors closure (rabbit) 71:147; Intercostal inspiratory muscle, hypercapnia, vagotomy (dog) 71:201; HFO (human) 74:163; Postocclusion hyperpnea, hypocapnia (awake human) 75:349
Mechanics of breathing: Geometry, maximum expiratory flow, density dependence (human) 52:113,125; Negative pressure (rabbit) 54:259; Model, flow dynamics 55:255; Fluids in, HF assisted ventilation 57:135; Alveolar liquid pressure, rabbit lung 57:61; Taylor laminar dispersion (human) 59:131; Flow regimes, HFV 63:293; Cartilage sup-

port (manatee) 68:63; Partitioning resistance (2 breeds calf) 69:299; Shape, dead space, model 73:133; Collateral, resistance (dog lung) 74:253; Liquid instability model 75:141

Neurobiology: *see* Hypoglossal nerve, Muscle, smooth, Neuron, afferent, sensory, Superior laryngeal nerve

Nose: Occlusion, ventilation, drive (human) 51:209; Breathing route, endurance run (human) 53:129; Nose closure muscles, 40 spp. anurans 53:215; Temperature regulation (dik-dik) 56:183; Heat exchange (reindeer) 59:279; Alae nasi, pharmacology (dog) 63:361 (human) 72:163; Muscle activity, hypoxia, hypercapnia (human) 64:177; Nasal, tracheal occlusion, breathing pattern (dog) 65:315; Expiration, tracheal breathing (pup) 66:181; Breathing, soil-covered armadillo 67:239; Temperature-sensitive "flow" receptors (rat) 75:51; Occluded, sedation effects on oral breathing, asphyxia (newborn, adult sheep) 75:89

Upper: Extrathoracic, lung volume measurement (human) 52:217; Muscle activity, head position (cat) 60:181; Panting, feeding dog 61:185; Resistance, CN^-, nicotine (dog) 63:161; Nasal, tracheal occlusion, breathing pattern (dog) 65:315; Reticular mechanisms, hypoglossal, trigeminal activity (cat) 66:27; Pressure pulses, breathing pattern (rabbit) 66:71; Resistance, muscle EMG (pup) 66:181; Impedance, respiratory cycle (dog) 70:13; Dilators, hyperoxic hypercapnia, sleep (cat) 70:183; Calcium antagonist role, responses to spasmogens, antigen (human) 74:15; Hypercapnia, resistance, collapsibility (dog) 75:29

Alkalosis, respiratory

Progesterone with estrogen (virgin guinea pig) 52:259, Hatchling 53:173; Intracellular pH, HCO_3^- (rat) 55:121; Skeletal muscle O_2 availability (cat) 70:143

Alphastat control, *see* Acid-base status: temperature effects

Allometric relations

General: Justification, 3/4 mass exponent 52:149; O_2 uptake, use, throughout life 53:135; Ontogeny vs phylogeny 55:1; Heart mitochondria, body mass (mammals) 55:131; Breathing pattern, respiratory drive, 11 spp. mammals 58:245; Bird egg shell water vapor conductance vs number shell pores (161 spp.) 61:1; Contractility diaphragm, respiratory mechanics, 13 spp. mammals 64:267; Postnatal lung development, growth (human) 67:247,269; Whole body geometric, elastic scaling, e.g. cardiac output 73:11

Body size: Respiration, lung function (mouse) 60:83; Normal respiratory variables (guinea pig) 61:347; Hyperoxia, ventilation, metabolism, small-mammal new-born (mouse) 63:267; Stature, lung volumes (human adolescent) 65:139; RBC O_2 binding, hematology, larval salamander 70:73; Ventilatory system resistance, (young human) 73:201; Diaphragm biochemical characteristics, 8 spp. mammals 74:115

Alveolar-arterial, -capillary equilibration

HFV oscillations (dog) 54:31; Equilibration (sheep) 55:205; Lung CO_2 transfer kinetics (human) 60:21; Transient, O_2, CO_2, rebreathing (dog) 60:135; Transport, HFO (dog) 63:201; CO_2 diffusion limitation, isotopic O (human) 67:13; D_{O_2}, exercise, hypoxia, hypercapnia (dog) 68:1; P_{CO_2} equilibration, accurate measure (cat) 73:257

Alveolar gas, *see also* Gas exchange

Everest summit (human) 52:265; P_{O_2} menstruation 56:229; K^+-depleted rat 57:23; Surfactant surface tension 58:1; CO_2 transfer kinetics (human) 60:21; Acceleration (human) 62:141; Rapid composition change, immediate acid-base status (dog) 68:251

Alveolar plateau

Inspired, preinspiratory volumes dependence (human) 56:309, 63:327; Slope, HFO (human) 66:95; Slope, diffusion (human) 72:257

Alveolus, *see also* Surface area, respiratory

Aerosol deposition (human) 56:327; Liquid pressure lung (rabbit) 57:61; "Alveolar" receptor, local anesthetic (dog) 67:159; Axial diffusion, expansile duct model 73:273

Ambient pressure, *see* Decompression, Diving, High altitude

Ammonia

Water breathers: exercise (trout) 51:303, (blue crab) 58:359

Amphibian respiration

Acid-base status: Hyperoxia, dehydration (toad) 59:225

Baro-, chemoreceptors: Aortic trunk (toad) 60:365

Blood: Flow, hypoxia small lung area (bullfrog) 52:181; O_2 binding, Root effect (frog) 61:125; Allometry, RBC O_2 binding, hematology (larval salamander) 70:73

Gas exchange routes: Regulation, skin (bullfrog) 55:379; Tadpole lung development (bullfrog) 59:231; Skin, environmental O_2,

CO_2 effects (frog) 65:99; Skin D_{O_2} increase, cold submerged bullfrog 70:85; C_2H_2, Freon 22 elimination, rest, exercise (lungless salamander) 72:229
Temperature effects: Hypoxia (toad) 69:267
Ventilation: Gill, lung, preparation for metamorphosis (bullfrog) 66:279; Hypoxia, temperature (toad) 69:267; Hypoxia, hypercapnia, chemodenervation (toad) 70:377; Carotid labyrinth denervation normoxia vs hypoxia, hypercapnia (frog) 73:243

Amphibians
Anurans: bullfrog *Rana catesbeiana* 52:181, 55:379, 59:231, 66:279, 70:85; toads, frogs, 40 spp., 53:215; toad *Bufo marinus* 59:225, 70:377, *B. vulgaris* 60:365, *B. paracnemis* 69:267; frog *Xenopus laevis* 61:125, 73:243, *Rana pipiens* 65:99
Urodeles: Salamander *Ambystoma tigrinum* larva 70:73, *Desmognathus quadramaculatus* 72:229

Anaerobiosis
O_2 uptake, use, throughout life 53:135; Metabolism intertidal *Sipunculus* 59:361

Anemia
O_2 release HbO_2, capillary P_{O_2} 63:79

Anesthesia effects
Diaphragm (rabbit) 56:105; Halothane, breathing pattern (rat) 61:105; Normal respiratory variables (guinea pig) 61:347; $[H^+]a$, muscle metabolites, exercise (rat) 65:85; Hyperoxia, hypercapnia (cat) 65:181; Vs decerebration, phrenic neurogram (dog) 65:267; Positive pressure load (human) 65:303; Graded, larynx-induced apnea (piglet) 66:235; Local, "alveolar" vagal receptor (dog) 67:159; Lung denervation, breathing pattern (rat) 70:205; Ventilation, hypoxia, intact, awake newborn pig 71:307

Angiogenesis
Chorioallantois, adenosine (chick) 71:33

Animals, *see* Amphibians, Birds, Fish, Invertebrates, Mammals, Reptiles

Anoxia
Intra-extracellular acid-base status, electrolytes, submerged, cold turtle 53:187

Antigens, *see* Sensitization

Aortic body, *see* Chemoreceptors, aortic body

Apnea, *see also* Asphyxia, Breath hold, Breuer-Hering reflex
High altitude sleep, native low-, highlanders 52:281; Upper airway negative pressure (rabbit) 54:259; HFV (dog) 60:357; Larynx stimulation, sleep (lamb) 63:31; Morphine, hypoglossal, phrenic nerve activity (cat) 64:289; Breathing pattern, term fetal lamb 65:55; Asphyxic, respiratory muscle activity, opisthotonus (rabbit) 65:285; Larynx-induced, graded anesthesia (piglet) 66:235; Nicotine-induced, effect nicotine receptor antagonist (dog) 66:303; None, soil-covered armadillo 67:239

Apneusis, *see* Ventilation

Apomorphine, *see* Neurotransmitters

Apparatus
Face mask, breathing pattern, attention on breathing (human) 72:123

Arousal
Larynx stimulation, sleep (lamb) 63:31

Arterial P_{O_2}, *see* Blood gases

Arteriovenous O_2 content difference
"Athletic" vs "normal" mammals (dog, pony; calf, goat) 69:7,65

Artificial, assisted ventilation
HF 57:135; Surfactant metabolism (rabbit) 58:15,29; HF, lungs alone, expiration (dog) 61:57; Pa_{O_2}, phrenic nerve oscillations (cat) 61:301; Chest wall activity, inhaled CO_2 (human) 66:171; Entrainment rhythm, lung inflation, vagus cooled (rabbit) 75:157; Jet ventilation model, flow, pressure 75:235

Asphyxia
Brain surface pH, respiratory arrest (dog) 51:31; Respiratory, cardiovascular, submerged duck 53:109; Inspiration increase, proprioception (rabbit) 64:57; Respiratory muscle activity, opisthotonus (rabbit) 65:285; Action neuropeptide Y, carotid body (cat) 67:357; Larynx motoneuron activity (rabbit) 70:327; Tracheal muscle, stretch receptor activity (dog) 71:343; Nose occluded, sedation effects on oral breathing, asphyxia (newborn, adult sheep) 75:89

Aspirin
Contractility, warmed, cooled airway smooth muscle (guinea pig) 53:225

Asthma
Hyperinflation, elasticity (human) 54:295; Temperature, airway contraction (human) 57:269; Maldistribution ventilation (child) 69:287; Calcium antagonist, responses to spasmogens, antigen (human) 74:15

Atelectasis
Airway closure, trapped gas, low-volume breathing (human) 51:63; Lobar, blood flow, volume, water content (dog) 51:333

Athletes, *see also* Exercise, Swimming, Training
"Athletic" vs "normal" animals, respiratory system adaptive variation (dog, pony; calf, goat) 69:1–127

ATP
Ambient O_2, RBC (chick embryo) 51:141; HbO_2 binding (rhino, tapir) 56:1
Attention
To breathing, breathing pattern, face mask (human) 72:123
Auditory stimuli
Breathing pattern, resting human 68:345
Augmented breath
Upper airway muscles (dog) 53:87
Autonomic nervous system, *see also* Catecholamines, Neurotransmitters
Parasympathetic: Reversal opioid agonist cardiorespiratory effects (dog) 67:101; Capsaicin-induced tracheal relaxation, drop bronchoconstrictor activity (cat) 73:21
Sympathetic: Influence, pressure/flow, lung vascular bed (dog) 60:169; Hypoxia, exercise (dog) 61:167; O_2 chemoreception, aortic body (cat) 63:375; Afferents left ventricle, respiratory response (cat) 63:383; Absence β adrenergic receptors, carotid body (goat) 64:203; Action neuropeptide Y, carotid chemoreceptors (cat) 67:357; Innervation bronchial smooth muscle (human) 68:53; Cervical sympathetic responses, ventrolateral medulla surface foci cooling (rat) 74:35; Prolonged hypoxia, artery structure, norepinephrine dynamics (dog) 74:211; β adrenergic blockade, high K^+, chemoreceptor discharge (cat) 74:229

Barometric pressure, *see* Decompression, Diving, High altitude
Baroreceptors
Inspiratory termination (cat) 52:387; Positive end expiratory pressure (rabbit) 56: 261; Carotid glomectomy (rat) 57:235; Turtle 59:45; Toad 60:365; Tortoise 65:295; 5 yr after depressor nerve section (cat) 69:209; Glucose effects (cat, rat, dog) 72:347
Behavior
Maternal, newborn rat 51:1
Bias flow rate
Gas transport, HFO (dog) 60:267
Bicarbonate, *see also* Acid-base status, Ion exchange
Exercising trout 51:303; Metabolic acidosis (dog) 54:241; Intracellular, hypocapnia (rat) 55:121; Extracellular carbonic anhydrases skeletal muscle 56:269; CSF: respiratory acidosis (dog) 57:365, amiloride (dog) 58:101; Infusion, IPC response CO_2 (duck) 66:83
Biochemical characteristics
Mammal diaphragm, f_R (cattle, pig, rabbit, guinea pig, rat, mouse) 74:115
Biogenic amines
Turnover, brainstem nuclei (newborn rabbit) 58:313
Bird respiration, *see also* Embryo, Hatchling, Nestling
Acid-base status: CO_2 breathing (duck) 68:189
Air sacs, airways: Pressure-loaded air sac (hen) 58:197; Gases, dead space change (goose) 66:109; Aerodynamic inspiratory valving: gas density, velocity (goose) 70:287, aerodynamic considerations 72:241, model, convective inertia 73:111
Blood: CO_2 dissociation, embryo, adult (hen) 57:123; RBC organic phosphates, Bohr effects (house sparrow) 59:93
Blood flow: Submerged or asphyxic duck 53:109; Distribution, hypocapnia, hypoxia (duck, goose) 61:21; Lung blood flow, D_{O_2} (duck) 63:285
Chemoreceptors, arterial: Duck 56:369
Diving: Duck 53:109; Charadriiform lungs 68:99
Flight: Soaring, gliding charadriiform lungs 68:99
Gas exchange: Domestic, wild hen 52:27; DNP (duck) 57:1; Exercise, hypoxic duck 59:105; Dead space (duck) 63:139
Intra-, extrapulmonary shunt (duck) 63:151; Neopulmo, paleopulmo (goose) 66:109; Blood gases, vagotomy (pigeon) 66:293; Blood gases, hypercapnia, deep hypoxia (duck) 67:1; O_2 extraction (penguin) 71:387
Intrapulmonary CO_2 receptor (IPC): Asphyxic duck 53:109; Exercising duck 53:355; Cockerel 54:223, 233; Receptive fields (duck) 57:317; V_T change (hen) 61:95; Chicken, duck 61:179; Venous CO_2 load (duck) 66:53; CO_2, infused HCO_3^- (duck) 66:83; Panting pigeon 75:267
Lung: Respiratory lung volume changes (duck) 59:15; Aerosol particle phagocytosis (duck) 67:23; Exclusively paleopulmonic parabronchial (penguin) 71:387
Metabolism: Hatchling-adult mass-independent metabolism, altricial-precocial continuum (192 spp.) 65:69
Morphometry: 51:319
Pulmonary receptors: Mechanoreceptors, panting pigeon 75:267
Thermoregulation, ventilation: Panting emu 54:189; Spinal cord warmed (pigeon) 57:89;

Cold exposure (duck) 57:103; Tracheal coiling (crane) 62:95; Hypothermia, vagotomy (pigeon) 66:293
Tissues: Capillarity muscles, maturing chick 58:137, hatchling geese 58:151
Ventilation: Submerged or asphyxic duck 53:109; Normocapnic exercising, hyperthermic hen 54:109; DNP (duck) 57:1; Response to P_{CO_2} or H^+ (duck) 68:189; Penguin 71:387

Birds, *see also* Embryo
Charadriiform: razorbill, spectacled guillemot, herring gull, common gull, black-headed gull 68:101
Crane: 4 spp. 62:95
Duck: 53:109,355, 56:369, 57:1,103,317, 59:15,105, 61:21,179, 63:139,151,285, 66:53,83, 67:1,23, 68:189
Emu: 54:189
Goose: bar-headed 58:151, 60:21, Canada 51:319, 58:151, domestic, 51:319, 66:109, 70:287
Hen: domestic: 52:27, 54:109,223,233 57:123, 58:137,197, 61:95,179; wild, 52:27
Parrot: African, 55:277, lovebird *Agapornis roseicollis* 65:197
Passerine spp: 55:291
Penguin: little Eudyptula minor 71:387
Pigeon: 57:89, 66:293, 75:267
Sparrow, house: 59:93

Birth
Resuscitation (rat) 51:1

Blood: air breathers
Viscosity, RBC volume, reticulocytosis, high altitude-susceptible rat 70:229

Blood-brain barrier
Drug modulation breathing pattern (dog) 53:71

Blood flow
Airways: Bronchial, positive end-expiratory pressure, pulmonary artery occlusion (dog) 66:269; Bronchi, temperature dependence (dog) 68:259
Body: To leg, submerged or asphyxic duck 53:109, Regional, acute hypoxia (sheep) 53:161; Diffusion in tissue gas exchange 56:131; Regional redistribution, hypoxia (sheep) 57:73; Peripheral, 96 hr eucapnic hypoxia (sheep) 59:197; Distribution, hypocapnic hypoxia (duck, goose) 61:21; Regional, fetal llama 75:327
Brain: Cerebral, HF assisted ventilation 57:135; Regional, high altitude (calf) 58:111; Regional, subthalamic locomotor region stimulation (cat) 64:93; Regional, exercise (pony) 64:339; Cerebral, hyperoxia, high-altitude acclimatized cat 65:365; Distribution, exercise, splenectomy (pony) 68:77; Velocity, acetazolamide (human) 72:315
Heart: Chronic bradycardial pacing (rabbit) 72:1
Lung: Alveolar gas exchange perfusion, diffusion limitations 51:287; Small hypoxic lung area (bullfrog) 52:181; Measurement errors 54:381; Regional, posture (human) 56:169; Acute pulmonary hypertension (dog) 60:169; Response time, hyperoxia (fetal lamb) 63:43; And O_2, effect on D_{O_2} (duck) 63:285; Hypoxic vasoconstriction, almitrine, chemodenervation (dog) 74:139
Muscle: Exercise (dog) 61:317; Regional, distribution, respiratory muscles (sheep) 67:283; Distribution, temporal variability, exercising skeletal muscle (dog) 74:1
Organs: P_{O_2} change, vertebral, carotid blood flow (cat) 63:65; Skin, environmental O_2, CO_2 change (frog) 65:99; Oxygenation, changed blood O_2 carrying properties 72:211

Blood gases
Air-breathing poikilotherms: Hyperthermia, hypercapnia (turtle) 67:37; P_{O_2}, temperature (toad) 69:267
Birds: O_2 affinity, domestic, wild hen 52:27; High Pa_{O_2}, panting emu 54:189; Hatchling chick 53:173; Exercising duck 53:355; Shell H_2O conductance (chick) 54:137; DNP (duck) 57:1; Spinal cord heated (pigeon) 57:89; Cold exposure (duck) 57:103; Arterial, vagotomy (pigeon) 66:293; Hypoxia tolerance (duck) 67:1; Nomogram, 18-d chick embryo 71:315
Mammals: Whole blood CO_2 dissociation curve, Haldane effect (human) 51:167; Diving mammals 54:269; Muskrat 57:15; Chronic mountain sickness 2 rat strains 58:161; Induced high oxygen affinity (rat) 58:335; Rest, sleep, heart-, heart-lung transplant (human) 72:131; Nose occluded, sedation, oral breathing, asphyxia (newborn, adult sheep) 75:89; Chronic CO, low, high altitude (rat) 75:193
Water breathers: Heavy exercise (trout) 68:85

Blood pressure
General: Respiratory arrest (dog) 51:31; Positive end-expiratory pressure (rabbit) 56:261; Lung inflation (dog) 57:259; Lung arterial, pressure/flow lung vascular bed (dog)

60:169; Lung, acute, chronic response hypoxia (2 rat strains) 64:81; ECF acid, acid-base infusion, thromboxane (cat) 71:169
Neurobiology: Baroreceptor modulation inspiration (cat) 52:387; Medulla areas affecting (cat) 58:323; Central command, exercise (cat) 59:313; Chemosensitive sympathetic afferents left ventricle (cat) 63:383; Subthalamic motor region (cat) 64:93,317; Ventrolateral medulla surface foci cooling (rat) 74:35

Blood volume
Diving mammals 54:269; High altitude (2 rat strains) 62:85; Regional, acid-base change, skeletal muscle O_2 availability (cat) 70:143

Body size, *see* Allometric relations

Bohr effect
Air-breathing poikilotherm: CO_2-Bohr effect, winter submerged, summer turtle 53:15
Bird: Domestic, wild hen 52:27; CO_2, fixed acid effects, RBC organophosphates (sparrow) 59:93
Mammals: Bohr coefficient magnitude, O_2 delivery 54:161; O_2 binding, Hb (rhino, tapir) 56:1; Muskrat 57:15; High altitude natives 61:197; Pig 64:113; Human RBC, Hb solutions 73:363
Water breathers: Acclimation temperature, O_2 transport (carp) 52:165; Hemocyanins (2 hydrothermal vent crustaceans) 71:5

Brain, *see also* Central nervous system (CNS); Neurons, central, CNS
Surface pH, CSF acid-base, respiratory arrest (dog) 51:31; Cooling (dik-dik) 56:183; High altitude, regional blood flow (calf) 58:111; Temperature, heat stressed camel 70:97; Glucose stimulation chemoreceptors, baroreceptors (cat, rat, dog) 72:347

Brain stem, *see also* Bulbospinal, Medulla, Pons, Respiratory centers
Methylxanthine (cat) 53:239; Hypocapnia, ventilation (cat) 55:95; Local hypoxia (cat) 57:171; Split, vagotomy (rabbit) 57:293; Nuclei, biogenic amine turnover (newborn rabbit) 58:313; Comparison trigeminal, hypoglossal, phrenic activity (cat) 62:61; P_{O_2} change, vertebral, carotid blood flow (cat) 63:65; Activity bulbar respiratory neuron (turtle) 64:149; Section, analeptic effect, cardiorespiratory responses (fetal lamb) 66:387; Reticular formation, facial nerve respiratory-related activity, decerebrate cat 73:175,189

Branching airways
Ratio, growth, (bronchial) tree 63:97; Vertex analysis, branching ratio 65:245

Breath hold, *see also* Diving
Respiratory, cardiovascular effects (duck) 53:109; Slope alveolar plateau (human) 56:309; Lung CO_2 transfer kinetics (human) 60:21; Or snorkel, F_H, underwater swim (human) 69:387; Prior eucapnic hyperventilation (human) 70:369; Or elastic load, respiratory muscle activity (human) 72:151

Breathing pattern, *see also* Expiration, Inspiration, Panting, Respiratory frequency, Tidal volume
General: Breathing route (human) 51:209; HFV (dog) 54:1; Bronchospasm (human) 56:195; Catecholamines (dog) 61:167; Guinea pig normal respiratory variables 61:347; Walking stride frequency (women) 62:117; Tachypnea, amyl nitrite inhalation (rabbit) 62:169; Diaphragm length, hypoxia, hypercapnia (dog) 65:39; Exercise, peripubertal trained swimmers 65:351; Interaction chest wall activity, inhaled CO_2 (human) 66:171; Individuality (human) 68:331; Air volume acceleration, transition expiration-inspiration (human) 71:117; Entrainment rhythm, lung inflation, vagus cooled (rabbit) 75:157; Individuality, 4–5 yr interval (human) 75:199; Twins (human) 75:211; Exercise, untrained children 75:225
Mechanics: Pressure-loaded air sacs (hen) 58:197; Effects measuring apparatus (human) 61:255; Negative pressure breathing, occlusion, upper airways (dog) 65:315; Upper airway pressure pulses (rabbit) 66:71; Post-occlusion (awake human) 75:349
Neurobiology: Abrupt drop discharge central chemoreceptors (cat) 51:109; Fetal breathing movements (lamb) 52:99, 55:23; Peripheral chemoreceptors, hypoxia, awake cat 58:207; Airway stretch receptor block (rabbit) 59:169; Lung C-fibers, stretch receptors, cooled vagus (dog) 64:29; Anesthesia vs decerebration (dog) 65:267; Newborn, lung denervation (rat, rabbit) 67:137; End-expiratory lung volume change, vagotomy (dog) 67:347; Visual, auditory stimuli (human) 68:345; Superior laryngeal nerve section (rat) 70:51; Interaction hypoxia, hypercapnia at carotid body (goat) 70:63; Acute, chronic lung denervation (rat) 70:205; Rest, sleep, heart, heart-lung transplant (human) 72:131
Perinatal, juvenile: Developing awake kitten 58:253; Halothane, CO_2, age (rat) 61:105; Hyperoxia (newborn mouse) 63:267; Fetal lamb near birth 65:55; Newborn, lung den-

ervation (rat, rabbit) 67:137; Periodic breathing, hypoxic newborn kit 73:55
Poikilotherms: Hypoxic garter snake 53:63; Control ventilatory cycle (garter snake) 64:13; Hyperthermia, hypercapnia (turtle) 67:37; Toad 69:267; Anoxic, anoxic-hypercapnic turtle 71:213
Temperature effects: Cold-air breathing (cat) 54:41; Body temperature (lizard) 65:29; Heat stressed camel 70:97
Water breathers: Mesencephalon (carp) 51:95; Branchial vagal ganglia stimulation (carp) 51:241

Breathing route
Ventilation, hypoxia, hypercapnia, nose occlusion (human) 51:509; Endurance run (human) 53:129: Airway resistance, CN^-, nicotine (dog) 63:161; Negative pressure, upper airway (dog) 65:315; Adaptation air breathing, intertidal rockpool teleost (*Blennius*) 71:355

Breath sounds
Small-airway disease, smokers 53:203; Lung volume, airflow (human) 66:1

Breuer-Hering reflex
Slow wave sleep, elastic loading (human) 55:103; Infant, child 68:311; Absent awake, present sleep (human) 73:145

Bronchi, *see also* Airways
General: Edema, bronchial diameter (dog lung) 55:223; Methacholine response, airway muscle structure (human) 58:223; Branching models 63:97; 65:245; Blood flow, positive end-expiratory pressure, occluded pulmonary artery (dog) 66:269; Blood flow, temperature (dog) 68:259; Interrupter method resistance measure 70:301; Inspiratory valving, bronchi, aerodynamic considerations (bird) 72:241
Bronchoconstriction: Bronchospasm (human) 56:195; Bronchoconstriction, ventilation (cat) 57:31; Bronchospasm, cold air, sensitized rabbit 63:347; Postmortem, Ca^{2+} (guinea pig) 68:41; Muscle, nonisotonic solutions, drugs (human bronchi) 69:277; SO_2 and cold-induced, drugs (rabbit) 71:1
Neurobiology: Nonmyelinated vagal receptors (rabbit) 55:63; Stretch receptor reflex, inspiration (rabbit) 60:311; Ultrastructure, neuromuscular control (human) 63:109; Sympathetic innervation muscle (human) 68:53

Buccal oscillations
Carotid labyrinth denervation, normoxia vs hypoxia, hypercapnia (frog) 73:243

Buffering, *see* Acid-base status

Buffering capacity
Prolonged hypoxia, effect hypercapnia (rat) 64:213

Buffer value
Root effect induction, eel blood 51:275; Embryo, adult (hen) 57:123

Bulbospinal, *see also* Phrenic nerve
Inspiratory neurons, respiratory reset (cat) 65:155

Burrowing
Lung artery muscle, hypoxia (hamster, rat) 56:45; Low ventilatory response CO_2 (rat, mice) 57:341; Owl: chicken, duck IPC response 61:179; High O_2 affinity (pangolin) 64:103; Soil-covered armadillo 67:239

Calcium
Channels tracheal smooth muscle (human, guinea pig) 59:143; Ca^{2+}, ciliary beat, skinned dog tracheal epithelium 60:9; Channel-active drugs, tracheal muscle, high K^+ (guinea pig) 61:43; Uptake, pH-, CO_2-induced tension change, rat tracheal muscle 66:259; Intracellular, contracting human bronchial smooth muscle 67:127; Influx, sensitization, tracheal muscle (guinea pig) 67:323; Bronchoconstriction postmortem (guinea pig) 68:41; ECF, Ca^{2+} ionophore-induced contraction bronchial muscle, drugs 71:157; Channel block, ventilation sustained hypoxia (human) 75:173;

Calmodulin
Ciliary beat, Ca^{2+}-treated tracheal epithelium 60:9

Capacitance coefficient
Diffusion, perfusion limitations, alveolar gas exchange 51:287; O_2, hypoxic trout 61:221; CO_2 effect temperature (turtle) 63:53

Capillaries, capillarity
General: P_{O_2}, effect rate O_2 release from HbO_2 63:79; P_{O_2} distribution, cylinder models 64:241
Lung: Volume (rabbit) 52:41; Blood flow, small hypoxic area (bullfrog) 52:181; Transit time, "athletic" vs "normal" animals (dog, pony; calf, goat) 69:101; Blood volume, NO, CO transfer (human) 70:113
Muscle: Icefish 57:201; Chick maturation 58:137; Hatchling goose 58:151; Density, 2 muscles, chronic hypoxic rat 62:135; "Athletic" vs "normal" mammals (dog, pony; calf, goat) 69:47,117; Increased blood O_2 affinity (rat) 72:83; Slow, fast, density (eel, rat) 74:383
Myocardium: Hyperoxia, cardiomegaly (chick embryo) 55:11; Cold growing guinea pig

59:1; Proliferation, heart, high altitude (newborn rat) 59:347; Density, hypoxia, mitochondria (guinea pig) 70:275; Chronic bradycardial pacing (rabbit) 72:1
Skin: Gas exchange (bullfrog) 55:379

Carbamino compounds
RBC trout 65:223

Carbon dioxide, *see also* Acid-base status, Alveolar gas, Chemoreceptors, Gas exchange, Hypercapnia, Hypocapnia, Ventilatory response to CO_2
General: Lung blood flow measurement 54:381; Extracellular carbonic anhydrases skeletal muscle 56:269; Mixed venous P_{CO_2} measurement, exercise (human) 59:379; Pulmonary transfer kinetics (human) 60:21; H_2CO_3 pK, blood temperature (trout) 61:237; Pa_{CO_2}, castration, female steroids (guinea pig) 61:383; End-tidal, non-REM sleep (human) 63:241; Interaction with chest wall activity, ventilated human 66:171; And pH, Ca^{2+}, tracheal muscle tension 66:259; Elimination excess, ventilation (human) 73:379; Natural arterial P_{CO_2} oscillations, chemoreception (cat) 74:49
Embryo, chick: O_2 affinity, equilibrium curve 52:13; Hyperoxia, late incubation 62:217
Ventilation: P_{CO_2}, hyperthermia, exercising hen 54:109; Breathing pattern (rat) 61:105; Interaction with lung inflation, effect phrenic activity (dog) 67:367

Carbon dioxide dissociation curve
Whole blood, Haldane effect (human) 51:167; Developing chick 57:123; Effect temperature (turtle) 63:53

Carbon dioxide production, output
Exercise, cold (deer mouse) 55:367; Skin gas exchange (bullfrog) 55:379; Different P_{O_2} (lugworm) 57:349; HFO, airway opening pressure (dog) 58:235; Lactate infusion (lizard) 60:253; Hyperoxic chick 62:217; Chick blastoderm 70:1; Adaptation air breathing, intertidal rockpool teleost (*Blennius*) 71:355; Penguin 71:387; Decrease, hypoxic newborn kit 73:55

Carbonic anhydrase
Extracellular, skeletal muscle (rabbit) 56:269; Inhibition, fetal lamb breathing movements 61:327; Inhibitor, CSF ions (dog) 69:257; Early development (marsupial) 73:69; Inhibition, ventilation, hypoxic sensitivity, intact, chemodenervated cat 74:373

Carbon monoxide
Total, membrane component, D_L (dog) 51:183; Phenobarbital, ventilatory CO - hypoxia reaction (cat) 64:307; Membrane diffusion capacity, lung capillary blood volume (human) 70:113; Chronic, blood gases, ventilation, low, high altitude (rat) 75:193

Cardiac frequency
Cardiogenic oscillations, expired gas (human) 52:191; Submerged or asphyxic duck 53:109; Lung inflation (dog) 57:259; Subthalamic motor region (cat) 64:93,317; Reversal opioid-agonist effects (dog) 67:101; Underwater, "rest", swim, breath-hold, snorkel (human) 69:387; Adaptation air breathing, intertidal rockpool teleost (*Blennius*) 71:355; Chronic bradycardial pacing, increased oxidative capacity (rabbit) 72:1; Heart transplant, gas exchange, metabolic transients, exercise (human) 74:355

Cardiac muscle, *see* Muscle

Cardiac output
Bird: Hatchling chick 53:173; DNP (duck) 57:1; Cold exposure (duck) 57:103; Exercise, hypoxic duck 59:105
Mammal: Acute P_{50} change, rat blood to guinea pig 51:21; Acutely hypoxic sheep 53:161; Lung blood flow 54:381; Positive end-expiratory pressure (rabbit) 56:261; Regional redistribution hypoxia (sheep) 57:73; HF assisted ventilation 57:135; Measure mixed venous P_{CO_2} (human) 59:379; Catecholamines, hypoxia, exercise (dog) 61:167; Muscle blood flow (dog) 61:317; Acceleration, hypercapnia (human) 62:141; Influence of f_R, V_T (human) 66:123; Diffusion capacity, 5-mile run 66:135; "Athletic" vs "normal" animals, respiratory system adaptive variation (dog, pony; calf, goat) 69:7,65,101; Indomethacin, lung edema, gas exchange (dog) 69:149; Whole body geometric, elastic scaling 73:11; Positive pressure ventilation vs HFV (dog) 75:247

Cardiogenic gas mixing
Human 56:37

Cardiopulmonary function
Acute high altitude (human) 54:363; Interpretation, 5-mile run 66:135; Altitude-susceptible rat 70:241

Cardiorespiratory function
Subthalamic locomotor responses (cat) 64:93; Subthalamic locomotor region lesion, static muscle contraction (cat) 66:215; Apnea, larynx-induced, anesthesia (piglet) 66:235; Hyperthermia, vagotomy (pigeon) 66:293; Analeptic effect, brainstem section (fetal lamb) 66:387; Hypoxia tolerance (duck) 67:1; Reversal opioid-agonist effects (dog) 67:101; Fetal llama 75:327

Cardiovascular reactions
High altitude (2 rat strains) 53:367; Diving, exercise, hypoxia (human) 56:245; Spinal cord heated (pigeon) 57:89; Lung inflation (dog) 57:259

Carotid artery
Blood flow, P_{O_2} change (cat) 63:65

Carotid body, *see also* Baroreceptors, Chemoreceptors, Neurotransmitters
Temperature regulation carotid rete (dik-dik) 56:183; Heat stressed camel 70:97

Carotid sinus nerve, *see* Baroreceptors, Chemoreceptors

Castration
Ventilation, Pa_{CO_2}, female steroids (guinea pig) 61:383

Catecholamines, *see also* Autonomic nervous system, Neurotransmitters
Hemodynamic response, acutely hypoxic sheep 53:161; Ion exchange, myocardial cell 56:289; Hypoxia, exercise (dog) 61:167; Role beta-adrenergic activity, high altitude acclimation (human) 70:195; Intracellular adrenergic pH regulation, RBC (salmon) 74:65

Cell, cell culture, *see also* Red blood cell
Regional O_2 consumption gastrula (chick) 51:153; Hypoxia, prostaglandin E_2, renal cell lines (rat, pig) 70:131

Central nervous system (CNS), *see* Blood-brain barrier, Brainstem, Bulbospinal, Cerebellum, Cerebral cortex, Cerebrospinal fluid, Decerebration, Electrophysiological recording, Medulla, Neuron, central, CNS; Pons, Respiratory centers, Spinal cord, Split brainstem, Subthalamic locomotor region

Cerebellum
Exercise, blood flow favored (pony) 68:77

Cerebral cortex, subcortex
Surface pH, respiratory arrest (dog) 51:31; Motor cortex stimulus, EMG latencies intercostal, truncal muscles (human) 73:325

Cerebrospinal fluid (CSF)
Acid-base status, respiratory arrest (dog) 51:31; Metabolic acidosis (dog) 54:241; Peripheral chemodenervated, acidotic goat 56:51; Sodium-coupled Cl^- transport (dog) 56:301; Acidosis, HCO_3^-, anion transport blocker (dog) 57:365; $[HCO_3^-]$, amiloride (dog) 58:101; Metabolic pHa change, chemodenervated cat 58:123; Acid-base, chronic hypercapnia (dog) 58:377; pH, control breathing (cat) 59:117; Ionic composition, carbonic anhydrase block (dog) 69:257]

Chemoreceptors
Hypoxia-sensitive, tuna gill arch 66:193; Hyperthermia, vagotomy (pigeon) 66:293; Response criteria, 16 pharmacological agents (rabbit) 66:367; Central, peripheral, acid-base disturbance (cat) 67:69; Interaction mechanoreceptors, chemoreceptors (dog) 67:183; Lung, CO_2-sensitive, gravity, CO_2 breathing (human) 71:247; CO_2, venous, absent (cat) 73:211

Chemoreceptors, aortic body
Duck 56:369; Long-term hypoxia, carotid body resection (cat) 58:207; Denervated, metabolic acidosis (rabbit) 54:97; Adrenergic mechanisms, hypoxic cat 63:375

Chemoreceptors, carotid, mammal, *see also* Baroreceptors, Chemoreceptors, aortic body
General: Medulla expiratory neuron response CO_2 (cat) 57:279; Arterial K^+ increase (cat) 59:65; Hypoxia, ventilation, newborn lamb 60:109; Dopamine agonists (mouse) 61:335; Alae nasi, hypercapnia, nicotine (dog) 63:361; Carotid body hypoxia, hypercapnia, different ventilatory responses (goat) 65:113; Anesthesia depth (cat) 65:181; Action neuropeptide Y (cat) 67:357; Ventilation, exercise, transient hyperoxia (human) 68:203; Hypoxic stimulus, hypoxic vasoconstriction, vagotomy (dog) 71:185; Interaction K^+, hypoxia (cat) 72:295; Glucose effects (cat, rat, dog) 72:347; Sustained hypoxia, hyperoxic hypercapnia (cat) 72:361; Discharge, natural arterial P_{CO_2} oscillations (cat) 74:49; Maturation, hyperoxia, mild hypoxia, exercise (child) 74:55; Discharge, high K^+, β adrenergic blockade (cat) 74:229; Steady-state discharge, almitrine, hypoxia, hypercapnia (cat) 74:275; Acute, prolonged hypercapnia (goat) 74:335
Control of breathing: 57:279, 58:207, 60:205, 61:335, 64:69, 65:113,181, 67:367, 68:203, 70:37,63, 72:47,295, 73:339
Denervation: Carotid sinus nerve section, salicylate (cat) 51:219; Intact, denervated, ventilation, acute metabolic acidosis (rabbit) 54:97; Unilateral carotid body excision (goat) 54:353; Carotid sinus nerve section, inspiratory termination (cat) 60:205; Denervated, acute metabolic acidosis (goat) 56:51; Glomectomy (rat) 57:235; Carotid glomectomy, hypoxia (cat) 57:331; Long-term hypoxia, carotid body resection, awake

cat 58:207; Carotid sinus nerve section, inspiratory termination (cat) 60:205; K^+, ventilation, CO_2-loaded cat 60:217; Molecular CO_2 or H^+ as stimulus (cat) 64:69; Hypercapnia, ventilation, almitrine (rat) 65:379; Interaction mechano-, chemoreceptors in breathing (dog) 67:183; Interaction lung inflation, CO_2 stimulus (dog) 67:367; 5 yr later, hypoxia, hyperoxia (cat) 69:209; Glomectomy, hyperoxia, medulla ECF pH, respiration (cat) 70:37; Interaction hypoxia, hypercapnia (goat) 70:63; Dopamine, norepinephrine, hypoxia (cat) 71:11; Adenosine, response hypoxia, hypercapnia (rat) 72:47; Almitrine-induced lung hypoxic vasoconstriction (dog) 74:139; Ventilation, hyperoxia, hyperoxia plus hypercapnia, denervation (lamb) 73:339; Effect carbonic anhydrase inhibition (cat) 74:373

Chemoreceptors, central, *see also* Medulla
General: Reduced chemoreceptor discharge (cat) 51:109; Salicylate stimulation (cat) 51:219; No interaction peripheral, central chemoreceptors to CO_2 (cat) 51:379; Breathing movements fetal lamb 52:99; Methylxanthine effect (cat) 53:239; Arterial acid base, medulla ECF pH, ventilation (cat) 53:379; Acute metabolic acidosis, chemodenervated rabbit 54:97; Brainstem hypocapnia (cat) 55:95; Peripheral chemodenervated, metabolic acidosis (goat) 56:51; Menstruation 56:229; CSF Na^+-coupled Cl^- transport (dog) 56:301; Nicotine action (cat) 57:153; Medulla CSF, ECF pH, ventilation, arterial metabolic pH changes (cat) 58:123; Long-term hypoxia, carotid body resection, awake cat 58:207; Role medulla ECF, CSF pH (cat) 59:117; Hypercapnia, ventral medulla cooling, capsaicin-induced reflexes (cat) 60:377; Respiratory neurons, pontomedullary junction (cat) 61:153; Dopamine agonists (mouse) 61:335; Effects non-REM sleep, ventilation, end-tidal CO_2 (human) 63:241; Alae nasi contraction, hypercapnia, nicotine (dog) 63:361; CO_2 response, local "inactivation" imidazole (rabbit) 64:161; Hyperoxia, anesthesia depth (cat) 65:181
Control of breathing: 51:109,219,379, 52:99, 53:329,379, 54:97, 55:95, 56:229,301, 58:207, 59:117, 61:335, 63:241, 65:181

Chemoreceptors, CO_2, intrapulmonary (IPC)
Bird: Submerged or asphyxic duck 53:109; Exercising duck 53:355; Hyperthermia, ventilatory movements, CO_2 sensitivity (cockerel) 54:223,233; Receptive fields (duck) 57:317; Discharge, V_T change (hen) 61:95; Chicken vs duck 61:179; Response, venous CO_2 load (duck) 66:53; HCO_3^- infusion, response CO_2 (duck) 66:83; Tonic, phasic, panting pigeon 75:267
Reptile: CO_2 sensitivity, temperature (lizard) 72:327; Discharge (alligator) 74:285; Temperature change (garter snake) 74:311

Chemoreceptors, lung, mammal
CO_2, vagal (rabbit) 63:227; Nicotine apnea reflex (dog) 66:303

Chemoreceptors, peripheral, bird
Hyperthermia, interaction carotid, pulmonary (cockerel) 54:223,233; Discharge, hypoxia, hypercapnia (duck) 56:369

Chemoreceptors, peripheral, poikilotherm
Turtle 59:45; Toad 60:365, 70:377; Tortoise 65:295; Anoxic, anoxic-hypercapnic turtle 71:213; Carotid labyrinth denervation, normoxia vs hypoxia, hypercapnia (frog) 73:243

Chemoreflexes, *see also* Chemoreceptors
Salicylate neural stimulation respiration (cat) 51:219; High-altitude sleep, native high-, lowlanders 52:281; Loss, glomectomy (rat) 57:235; Defining criteria, 16 pharmacological agents (rabbit) 66:367

Chest wall
Mechanics of breathing: Rib cage shape, ventilatory regime (human) 54:197; Movement, expiratory loading (cat) 57:247; Mechanical coupling ribs, sternum (dog) 59:27; Expiratory muscles, posture (dog) 67:311; Ventral muscles, contractile properties (dog) 68:301; Triangularis sterni activity, posture (human) 74:151
Ventilation, breathing pattern: Neurons affecting pneumotaxic center (cat) 52:85; Interaction thoracic movement, inhaled CO_2 (human) 66:171

Cheyne-Stokes breathing
High-altitude sleep, native low-, highlanders 52:281

Children, *see* Juvenile

Chloride, *see also* Ion exchange
Bohr effect, human RBC, Hb solutions 73:363

Chorioallantois
Chick: Gas exchange, blood gases, hatching 53:173; O_2 consumption 68:377 68:377; Adenosine, angiogenesis 71:33; Blood flow distribution, 18-d chick embryo 71:315

Chronic mountain sickness, *see* High altitude

Cilia
Hyperoxia, tracheal explants (hamster) 53:285

Circadian rhythm
ECF pH, ventilatory control (crayfish) 69:359

Cold exposure, stress, *see* Temperature effects, Thermoregulation

Compliance

Mammal: Static, elastic behavior, child lung 52:229; Lung sounds, small-airway disease, smokers, 53:203; Pulmonary vessels, lung surface tension 56:21; Growing guinea pig 56:217; Histamine, methacholine (basenji, greyhound) 63:339; Lung, stress relaxation, age (rat) 7:295; Protein malnutrition (young rat) 68:29; Impedance measurement 68:145; Dynamic, lung receptor discharge (cat, rabbit) 68:161; Infant, child 68:311; Effect on interrupter measure resistance 70:301; Dynamic, bronchomotor tone, hypercapnia, hypoxia, vagotomy (newborn dog) 72:271; Lung vs total respiratory system, histamine (guinea pig) 73:155

Poikilotherm: Static, tadpole growth, metamorphosis (bullfrog) 59:231; Garter snake 64:13

Conductance

Eggshell: *see* Embryo

Mammal: Maximal O_2 consumption, D_L: 2 methods (canids) 54:173; Lung, gas exchange efficacy HFO (dog) 63:307; O_2 transfer RBC (human) 67:209; Lung vs total respiratory system, histamine (guinea pig) 73:155

Confined atmosphere

Critical P_{O_2}, effect CO_2 (rat) 62:105

Constant relative alkalinity, *see* Acid-base status: temperature effects

Control of breathing

Baroreceptors, inspiration termination (cat) 52:387; Athletes 55:393; Vocal cord movement, hyperventilation (human) 58:289; Gill, lung ventilation, preparation for metamorphosis (bullfrog) 66:279; Assessing utility of minipig 70:343

Control of breathing: central nervous, *see also* Decerebration, Hypothalamus, Medulla, Neurogenesis, Neurons, Neurotransmitters, Pons, Respiratory centers, Subthalamic locomotor region

Mammal: Effect methylxanthines (cat) 53:239, High altitude acclimation, decerebrate cat 54:343; Bronchoconstriction (cat) 57:31; Split brain stem (cat) 57:225, (rabbit) 57:293; Central command, reactions to exercise (cat) 59:313; Pontomedullary junction (cat) 61:153; Subthalamic locomotor region (cat) 64:93,317; Phenobarbital, CO-hypoxic reaction (cat) 64:307; Hypothermia recovery (cat) 64:329; Superior laryngeal nerve section (rat) 70:51; CO_2 narcosis, respiratory motor nerve activity (cat) 70:173; Dopamine, norepinephrine, hypoxia, ventilation (cat) 71:11; Air volume acceleration, index neuromuscular output (human) 71:117; Facial, hypoglossal vs phrenic nerve activity, chemosensitive vs vagal pulmonary inputs (decerebrate cat) 73:175,189

Poikilotherm: Garter snake 64:13

Control of breathing: chest, lung mechanoreception, *see also* Airways, Chest wall, Expiration, Inspiration, Neurons, afferent, sensory

Mammal: Laryngeal receptors (dog) 54:317; HF assisted ventilation 57:135; Interaction inhaled CO_2, chest wall activity (human) 66:171; Larynx role (dog) 67:53; Intercostal inspiratory shortening, hypercapnia, occlusion, vagus (dog) 71:201; Rest, sleep, heart-, heart-lung transplant (human) 72:131; Respiratory pattern setting, lung mechanoreceptors, IPC, hyperthermic pigeon 75:279

Control of breathing: humoral factors, *see also* Acidosis, Alkalosis

Bird: Exercising duck 53:355; cockerel 54:223,233; Ventilatory response to CO_2 or H^+ (duck) 68:189

Mammal: Metabolic acidosis (dog) 54:241; Slight hypercapnia (cat) 55:81; K^+-depleted rat 57:23; Arterial pH servocontrolled ventilatory simulation (dog) 58:345; Chronic hypercapnia (dog) 58:377; Model, ventilatory exercise stimulus 59:55; Endogenous opioids (human) 61:85; Interaction inhaled CO_2, chest wall activity (human) 66:171; P_{CO_2} controls diving (Weddell seal) 67:197

Control of breathing: humoral factors; central chemoreception, *see* Chemoreceptors, central

Control of breathing: humoral factors, central vs peripheral chemoreception

Abrupt reduction central chemoreceptor discharge (cat) 51:109; No interaction (cat) 51:379; Acute metabolic acidosis, chemodenervated rabbit 54:97; Menstruation 56:229; Brainstem vs peripheral hypoxia (cat) 57:171; Hypoxia, ventilation (newborn lamb) 60:109; Larynx, nose muscle activity, differences chemical drive (human) 64:177

Control of breathing: humoral factors; peripheral, carotid chemoreception, *see* Chemoreceptors, aortic; Chemoreceptors, carotid; Chemoreceptors, peripheral, bird

Control of breathing: humoral factors; pulmonary CO_2 sensitivity, *see* Chemoreceptors, CO_2, intrapulmonary
Control of breathing: neurogenic factor, movement, *see* Exercise
Control of breathing: temperature, *see also* Temperature effects, Thermoregulation
Birds: Normocapnic exercising or hyperthermic hen 54:109; Interaction hyperthermia, chemoreceptors, ventilatory movement (cockerel) 54:223,233
Mammals: Hypothermia, central control respiration (cat) 58:295; Sudden cold water immersion (human) 70:121
Poikilotherms: Hypercapnia, IPC, stretch receptor, mechanoreceptor (snake) 74:311
Control of breathing: water breathers, *see* Water breathers' respiration
Convection
Convective, diffusive gas transport, chick embryo 52:137
Pulmonary: Gas exchange efficacy, HFO (dog) 63:307; "Athletic" vs "normal" animals (dog, pony; calf, goat) 69:81; Slope alveolar plateau (human) 72:257
Countercurrent exchange
Role diffusion, tissue gas exchange (model) 56:131; Heat, water conservation (reindeer) 59:279; Gas transfer fish gill 64:365
Critical O_2 tension
Intertidal *Sipunculus* 59:361; Twitch activity (moth larva) 60:121; Confined atmosphere, CO_2 effect (rat) 62:105; 2, acid-base status, H_2O ionic composition (trout) 74:77
Crosscurrent exchange
Intra-, extrapulmonary shunt (duck) 63:151; Lung blood flow, D_{O_2} (duck) 63:285
Cystic fibrosis
Cost of breathing (human) 65:257
Cytochromes
Acid-base change, skeletal muscle O_2 availability (cat) 70:143

Dead space
Series, parallel, quantitation (dog) 54:121; Gas exchange unicameral lung (lizard) 60:277; Bohr, Fowler (duck) 63:139; Frequency dependence, HFV (dog) 63:213; Volume altered, air sac gas composition (goose) 66:109; Inert gas mixing defect, lung volume (human) 667:355; Frequency-dependent, HFV (monkey) 73:125; Airway shape, HFO, model 73:133
Decerebration, decortication
High altitude acclimation (cat) 54:343; Central command, reactions to exercise (cat) 59:313; Inspiratory load, medulla inspiratory neuron activity, vagotomy (cat) 60:193; Vs anesthesia, phrenic neurogram (dog) 65:267; Hypoxic depression ventilation, newborn rabbit 71:25
Decompression
N_2 - O_2 tissue bubble growth 71:299
Dehydration
Hyperoxic toad acid-base status 59:225; Heat-stressed camel 70:97
Denitrogenation
Acute high altitude exposure (human) 54:363
Density, gas
Airway geometry, expiratory flow (human) 52:113; Density dependence, maximum expiratory flow 52:125
Development, *see also* Life Stage
Naloxone, breathing control (piglet) 51:119; Static mechanics airways, rabbit fetus 51:195; Adaptation airway stretch receptors, newborn, adult dog 52:361; African parrots 55:277; CO_2 dissociation, buffer value (hen) 57:123; Ventilatory response CO_2, burrowers (rat, mice) 57:341; Muscle capillarity (chick) 58:137; Ventilation, breathing pattern, awake kitten 58:253; Tadpole lung (bullfrog) 59:231; Chorioallantois O_2 consumption (chick) 68:377; O_2 transport, affinity, Hb, carbonic anhydrase activity (marsupial) 73:69
Dextran
Lung plasma-lymph barrier (sheep) 68:239
Diaphragm, *see also* Muscles, respiratory, Phrenic nerve
General: And intercostals, firing pattern, heat tachypnea (rabbit) 51:259; Effect pulmonary receptors (rabbit) 53:307; Body temperature, passive motion, anesthesia (rabbit) 56:105; Nicotine action (cat) 57:153; Sciatic stimulation (dog) 58:65; Strength, phrenic nerve stimulus (human) 58:263; EMG, airway stretch receptor block (rabbit) 59:169; Awake, sleeping dog pup 60:95; Head position (cat) 60:181; Inspiratory-postinspiratory discontinuity EMG (rabbit, human) 64:295; Length, hypoxia, hypercapnia (dog) 65:39; EMG, interrupted breathing near birth (lamb) 65:55; Training, mitochondrial respiration (rat) 67:225; Hyperoxic hypercapnia, sleep (cat) 70:183; Adenosine antagonist (human) 72:163; Glucose metabolism, phrenic stimulation (rat) 73:163; Biochemical character-

istics, 8 mammals 74:115; Vasodilatation, lung C-fiber stimulation (dog) 75:279
Fatigue: Neostigmine, salbutamol (dog) 62:15; hyperpnea (human) 61:137; Capillarity, chronic hypoxia (rat) 62:135; Phrenic neural transmission (dog) 63:187; Of transmission (rabbit) 69:307
Mechanics: Upper airway negative pressure (rabbit) 54:259; Contractility 13 mammals 64:267; Inspiratory resistive load (rabbit, human) 69:369

Diffusing capacity
Bird: Passerine spp. 55:291; DNP (duck) 57:1; O_2, exercise, hypoxic duck 59:105; O_2, lung blood flow (duck) 63:285; Lung, 5 charadriiform spp. 68:99
Lung, human: Everest summit 52:265; Marathon 52:349; High negative inspiratory pressure 54:19; Membrane D_{CO_2} 60:21; Interpretation changes, 5-mile run 66:135; Alveolar-capillary, limitation, isotopic O 67:13; Postnatal development, growth 67:247,269; Estimate from ventilation-perfusion distributions 69:129; CO, NO 70:113; O_2, steady state, nonlinear dissociation curves, ventilation-perfusion inequality 73:279
Lung, mammal: Total, membrane component, physiologic, morphometric techniques (dog) 51:183; Lungs fixed zones II, III conditions (rabbit) 52:41; Simultaneous $D_{L_{O_2}}$, $D_{L_{CO_2}}$ (dog) 52:53, Morphometric, physiologic measurement (canids) 54:173; O_2, CO, sheep 55:205; Mouse size 60:83; O_2, exercise, hypoxia (dog) 68:1; "Athletic" vs "normal" animals (dog, pony; calf, goat) 69:81; Newborn, smoking mother (rat) 75:129
Other organs: Skin, hypoxia, increase D_{O_2}, cold submerged bullfrog 70:85; Skin, inert gases, rest, exercise (lungless salamander) 72:229
Water breathers: Model, fish gill 64:365

Diffusion
Airways, lung: Taylor laminar dispersion (human) 59:131; O_2, tracheal system (moth larva) 60:121; P_{O_2} distribution cylinder models 64:241; Slope alveolar plateau (human) 72:257
RBC: O_2 transfer conductance 67:209; Kinetics O_2 uptake, release 72:65
Respiratory organ: Limitations, alveolar gas exchange (mammal) 51:287; Diffusive, convective gas transport (chick embryo) 52:137; CO_2, transpleural (dog) 52:205; Limitation, venous admixture (turtle) 53:99; Resistance, due to albumen layer (chick embryo) 71:331
Tissues: Role, gas exchange 56:131; Distances (maturing chick muscle) 58:137, (hatchling goose muscle) 58:151; Distance, diaphragm, gastrocnemius, hypoxic rat 62:135; O_2, role myoglobin, hypoxic rat heart 63:275

2,3-Diphosphoglycerate
Ambient O_2, organic phosphates, RBC chick embryo 51:141; HbO_2 binding (rhino, tapir) 56:1; Muskrat 57:15; Induced high HbO_2 affinity (rat) 58:335; Low DPG/Hb (pangolin) 64:103; Role, O_2 transport high altitude 64:191; Binding, O_2 equilibrium curves 68:227; 4 pig embryo Hb's 69:347; Organ oxygenation 72:211; Pouch young (marsupial) 72:219

Distribution, *see also* Inhomogeneity
Body, blood flow: Acutely hypoxic sheep 53:161; Hypocapnic hypoxia (duck, goose) 61:21; Muscle, exercise (dog) 61:317; Respiratory muscles (sheep) 67:283; 18-d chick embryo, chorioallantois 71:315; Exercising skeletal muscle, temporal variability (dog) 74:1
Brain, blood: Exercise, splenectomy (pony) 68:77
Lung, bird: Dead space, shunts (duck) 63:139; Inspiratory valving, bronchi, aerodynamic considerations 72:241
Lung, human: Cardiogenic oscillations, expired gas 52:191; Rib cage shape, ventilatory regime 54:197; Interregional, posture 56:145, 169; Slope alveolar plateau 56:309; Aerosol deposition, exercise, smoking 56:327; Gas transport, HFO 58:279; Regional, HFO 62:1; Healthy children 65:127; Effect V_T 66:11; HFO 66:95; Ventilation, airway obstruction, asthma (child) 69:287
Lung, mammal: Atelectasis, lung fluid, perfusion (dog) 51:333; Ventilation-perfusion ratio, series, parallel dead spaces (dog) 54:121; Gas trapping (rat) 55:309; Transient alveolar-arterial O_2, CO_2 differences, rebreathing (dog) 60:135; He, CO, C_2H_2, HFO (dog) 63:201
Lung, poikilotherm: Ventilation-perfusion, unicameral lung (lizard) 60:277
Pleural liquid: Kinetics (dog) 65:13

Divers, diving, *see also* Decompression, Hyperbary
Cardiovascular, respiratory effects asphyxia (duck) 53:109; Hypoxia, exercise, bradycardia (human) 56:245; Blood gases (muskrat) 57:15; Hypercapnia, hypoxia, ventilation

(Weddell seal) 67:197; Airway, lung mechanics (manatee) 68:63; Lung morphometry, 5 charadriiform bird spp. 68:99; fH, breath hold or snorkel (human) 69:387; Carotid labyrinth denervation, normoxia vs hypoxia, hypercapnia (frog) 73:243

Donnan equilibrium
RBC trout 65:223; Bohr effect, RBC, Hb solution (human) 73:363

Dopamine, *see* Neurotransmitters

Drugs, *see* Pharmacological agents

Dual breathers, *see also* Skin
Primitive lung *Amia calva* 59:213

Dystrophy
Effects, trachea smooth muscle, drugs (hamster) 66:157

Ectotherm, *see* Poikilotherm

Edema, lung
Marathon (human) 52:349; Interstitial, bronchus diameter (dog) 55:223; Alveolar liquid pressure (rabbit) 57:61; Inspiratory resistive loading, closing volume (human) 68:137; Indomethacin, gas exchange (dog) 69:149; Permeability edema, alveolar hypoxia, inhibited hypoxic pulmonary vasoconstriction (dog) 75:11

Egg, egg shell, *see* Embryo, Life stage

Elastase
5 methods analysis pressure-volume curve (rat) 66:147

Elastic properties of lung
Child 52:229; Hyperinflation (human) 54:295

Electroencephalogram (EEG)
Carbonic anhydrase inhibitor, fetal breathing movements (lamb) 61:327

Electrolytes
Intra-, extracellular, cold, submerged, anoxic turtle 53:187; CSF, respiratory acidosis, anion transport blocker (dog) 57:365; H^+, Cl^- across carp RBC membrane 61:209

Electrophysiological recording
Baroreceptors: Turtle 59:45; Toad 60:365; Tortoise 70:377; Cat, rat, dog 72:347
Chemoreceptors: Aortic (duck) 56:369; Carotid (duck) 56:369, (cat) 59:65, 72:295,361, 74:49,229,275, (cat, rat, dog) 72:347, (goat) 74:335; IPC (bird) 54:233, 57:317, 66:53, 75:267, (reptile) 72:327, 74:311; Peripheral (turtle) 59:45, (toad) 60:365, (tortoise) 65:295; Gill arch (tuna) 66:193
CNS: Motor (cat) 57:225; Medulla expiratory (cat) 57:279, inspiratory (cat) 60:195; Pontomedullary junction (cat) 61:153; Medial nuclear complex, solitary tract (cat) 64:135; Bulbar (turtle) 64:149
Mechanoreceptors, airways: Tracheal stretch receptor (dog) 53:325, 66:205, 71:343, 75:289; Pressure-sensitive receptors (cat) 55:341,355; Nose, temperature-sensitive "flow" receptors (rat) 75:51; Larynx (dog) 54:317, 61:289, 74:25, cold (dog) 59:35, 64:45, 66:61, 71:287, cat 67:379; Pressure (dog) 57:113; Pressure, flow (rabbit) 62:195
Mechanoreceptors, lung: Nonmyelinated vagal (rabbit) 55:63; C-fibers (dog) 64:29, 72:19; Vagal, lung stiffness (rabbit, cat) 68:161; Pigeon 75:267; Stretch receptors (rabbit) 62:169, (rabbit, cat) 68:161, (dog) 64:29, 68:319, (garter snake) 74:311, (turtle) 75:75
Mechanoreceptors, proprioceptors, water breathers: Gill filament, raker (carp) 69:173; Gill arch (carp) 69:183
Motoneurons, respiratory: Hypoglossal (cat) 54:55, 56:339; Expiratory laryngeal (cat) 54:67; Phrenic (cat) 56:339, 60:347, 61:69, (rabbit, cat) 62:181; Recurrent laryngeal nerve (cat) 62:153; Laryngeal (rabbit) 70:327; Phrenic, hypoglossal, mylohyoid whole-nerve (cat) 73:97; Phrenic, hypoglossal, facial whole-nerve (cat) 73:175; Facial nerve (cat) 73:189
Muscle, respiratory: Upper airway (dog) 53:87; Inspiratory, (rabbit) 53:307; EMG intercostals (cat) 56:385; EMG spectra diaphragm (human) 61:137; Expiratory (cat) 72:303
Muscle, smooth: Airway, (dog) 52:245; Tracheal (guinea pig) 60:157, 67:323

Embryo, *see also* Life stage
Bird (domestic hen): Ambient O_2 effect, organic phosphates, RBC 51:141; Regional O_2 consumption, gastrula 51:153; Growth, hyperoxia 52:1, 58:351; O_2 affinity, equilibrium curve 52:13; Diffusive, then convective gas transport 52:137; Gas exchange, blood gases near hatching 53:173; Hyperoxia, cardiomegaly 55:11; CO_2 dissociation, buffer value 57:123; Late, effects hyperoxia 62:217; Age, chorioallantois O_2 consumption 68:377; Regional CO_2 production, blastoderm 70:1; Chorioallantoic angiogenesis, adenosine 71:33; 1st day, CO_2 production 71:133; 18 d, blood gas nomogram 71: 315; P_{O_2}, vitelline, intraembryonic vessels, diffusion resistance 71:331; Large, small egg, embryo mass, O_2 consumption normalize to shell surface area 74:177
Eggshell (domestic hen unless noted): Variable shell H_2O conductance, acid-base status 54:137; Conductance (parrot) 55:277; Variability shell conductance, gas exchange

59:339; Gas diffusive conductance, sea-level eggs at high altitude 60:237; Pore numbers, gas conductance, exchange, embryo growth (161 spp) 61:1; Conductance, pore geometry 65:213; Regional conductance, pore density (6 spp) 68:371; Diffusive conductance/perfusion differences, air cell, rest of egg 71:45; Shell membrane aeration 71:101; Air cell gas tension measurements, low, high altitude, 1914, 72:343; Large, small egg, embryo mass, O_2 consumption normalize to O_2 conductance 74:177; Conductance widely altered early, effects late embryo 74:187,199; Pore, diffusive, convective resistance, conductance (23 spp) 74:345
Mammal: 4 pig Hb's, O_2-binding functions 69:347

Endotoxin
Reduced hypoxic pulmonary vasocontriction (dog) 53:295

Endurance, *see also* Training
Respiratory, limb muscles (human) 53:47; Influence muscle length (human) 67:171

Energy
Use throughout life 53:135; Adaptive variation, mammal respiratory system 69:1–127; Whole animal metabolism, geometric and elastic scaling 73:11

Enzymes
Oxidative, high altitude adapted alpaca, llama, taruca 52:303

Epiglottis
As source of larynx afferent activity (rabbit) 69:195

Erythrocyte, *see* Red blood cell

Erythropoietin
Production, hypoxia, high blood O_2 affinity (rat) 60:1; Historical review 63:257

Everest, Mount, *see* High altitude

Exercise
Amphibian: C_2H_2, Freon 22 elimination, lungless salamander 72:229
Bird: Duck 53:355; Normocapnic, hyperthermic hen 54:109; Hypoxic duck 59:105
Control of breathing, mammal: 51:391, 54:211,331, 55:393, 56:61, 59:55,65,313, 64:317, 70:313
Mammal: Incremental load 51:391; Marathon 52:349; Oral, nasal breathing, 10 km run 53:129; Treadmill grade (goat) 54:331; Cold deer mouse 55:367; Diving bradycardia (human) 56:245; High altitude, metabolism vs ventilation (human) 57:377; Onset, CO_2 stores (human) 59:265; Walking stride frequency (women) 62:117; Anesthesia, acid-base status (rat) 65:85; Cost of breathing, cystic fibrosis 65:257; Ventilation pattern, trained peripubertal swimmers 65:351; Dry warm air, water loss (human) 67:115; Heart transplant, gas exchange, metabolic transients (human) 74:355; Breathing pattern, O_2 uptake, ventilation, untrained children 75:225; O_2 deficit-O_2 debt (pony) 70:251; Maternal, fetal lung growth 75:309
Mammal, blood: Whole blood CO_2 dissociation, Haldane effect (human) 51:167; Measure, mixed venous P_{CO_2} (human) 59:379; Muscle blood flow (dog) 61:317
Mammal, CNS: Model, ventilatory stimulus 59:55; Central command (cat) 59:313; Subthalamic motor region or muscle stimulation (cat) 64:317
Mammal, humoral, chemosensory factors: Ventilatory response CO_2, exercise, rebreathing women 53:263; Training, response CO_2 (human) 55:393; K^+ stimulus chemoreceptors (cat) 59:65; Ventilatory response K^+, chemodenervated cat 60:217; Catecholamines (dog) 61:167; Heavy, transient hyperoxia (human) 68:203; Maturation carotid chemoreceptors (child) 74:55
Mammal, lung: D_L, high negative inspiratory pressure (human) 54:19; Aerosol deposition pattern (human) 56:327; Small resistive load (human) 61:369; Changes diffusing capacity, cardiac output, 5-mile run (human) 66:135; Alveolar-capillary D_{O_2}, hypoxia (dog) 68:1; O_2 diffusion capacity from ventilation-perfusion distributions (human) 69:129; FRC changes, mechanism (human) 70:313
Mammal, muscle: Isometric, myoglobin function (dog) 53:1; Muscle stimulation, opiate, GABA (cat) 54:211; Tracheal smooth muscle relaxation (dog) 56:61; Passive, diaphragm activity (rabbit) 56:105; Muscle blood flow (dog) 61:317; Soleus mitochondrial distribution, volume, training (rat) 64:1; Endurance, muscle length 67:171; Blood flow distribution, temporal variability, skeletal muscle (dog) 74:1
Maximal: Everest summit 52:265; Cold deer mouse 55:367; Regional brain blood flow 64:339, and splenectomy (pony) 68:77; Acid-base status (trout) 68:85; "Athletic" vs "normal" mammals, respiratory system design (dog, pony; calf, goat) 69:1–127
Water breather: Tench 51:29, Gill ion exchange, acid-base status (trout) 51:303; Acid-base status (blue crab) 58:359

Expiration, *see also* Breathing pattern
Airway geometry (human) 52:113; Density dependence, maximum flow 55:125; Flow volume, marathon 52:349; Increased end-expiratory volume effects (human) 53:273; Resistance loading (human) 54:307; Effects positive end-expiratory pressure (rabbit) 56:261; Loading: SO_2, vagotomy (rabbit) 56:359; Threshold, loading (cat) 57:247; Reflex effects, SO_2 inhalation, laryngeal denervation (rabbit) 62:203; Pattern alae nasi contraction (dog) 63:361; Glottal constriction (dog) 67:53; End-expired volume, vagal cooling, section (dog) 67:347; Abdominal muscles (dog) 70:159; Abdominal muscles, length, EMG, supine dog 73:31; Patterns, gas exchange, newborn (human) 75:19
Expiratory duration: K^+-depleted rat 57:23; Increased FRC (cat) 58:77; Scaling (11 spp. mammals) 58:245; Duration, mechanisms, model (rabbit) 59:239; Longer, HFV lungs alone (dog) 61:57; Halothane, age, CO_2 (rat) 61:105; Small resistive load (human) 61:369; C-fibers cooled vagus (dog) 64:29; Time constant, upper airway resistance (pup) 66:181; Inspiratory resistive load, diaphragm (rabbit, human) 69:369; Lung-denervated rat 70:205; Increase, cigarette smoke isolated larynx (dog) 73:301
Neurons: Expiratory laryngeal motoneuron activity 54:67; Bulbar neuron activity (turtle) 64:149; Phrenic, hypoglossal, mylohyoid activity, lung volume change (cat) 73:97
Expired gas
Cardiogenic oscillations (human) 52:191
Extracellular fluid (ECF)
Brain ionic composition, carbonic anhydrase block (dog) 69:257
Extreme conditions, *see* Acclimation, High altitude, Temperature

Facial nerve, nucleus
Respiratory-related activity, decerebrate cat 73:175,189; Stimulation dorsomedial area, phrenic discharge, inspiration increase (rabbit) 75:65
Facilitated diffusion
Myoglobin: hypoxic exercising muscle (dog) 53:1, O_2, hypoxic rat heart 63:275
Fatigue, inspiratory
Diaphragm, effects neostigmine, salbutamol (dog) 62:15; Diaphragm, supramaximal phrenic stimulation (dog) 63:187; Inspiratory resistive loading, closing volume (human) 68:137; Transmission, diaphragm (rabbit) 69:307; Diaphragm, phrenic stimulation, glucose metabolism (rat) 73:163; Inspiratory resistive load, hypercapnia, EMG inspiratory muscles, ventilation (goat) 73:311
Feeding
Regulation airflow (dog) 61:185
Fetus, *see also* Life stage
(Lamb unless noted) Static mechanics, airways, saccules (rabbit) 51:195; Central chemoreceptor action, breathing movements 52:99; Hb 53:31; Oxygenation, breathing movements 55:23; CO_2, naloxone, sleep/wake, breathing movements 55:325; Tracheal fluid flow 57:47; Acidosis, surfactant synthesis 57:213; Breathing movements, carbonic anhydrase inhibition 61:327; Hyperoxia, lung blood flow response time 63:43; Fetal, adult Hb's (pangolin) 64:103; Breathing pattern near birth 65:55; Analeptic effect, cardiorespiratory responses, brainstem section 66:387; And maternal lung growth, litter size (rat) 72:171; O_2 transport, affinity, Hb, carbonic anhydrase activity, developing marsupial 73:69; Lung growth, maternal, fetal, hypoxia, hyperoxia (rat) 73:225; Surfactant, alveolar macrophages (monkey) 73:289; Lung growth, maternal cold exposure or exercise (rat) 75:309; Cardiorespiratory functions (llama) 75:327
First breath
Newborn resuscitation (rat) 51:1
Fishes
Carp: 51:95,241,165, 54:145,159, 60:39,59, 61:209, 69:173,183
Eel: *Anguilla anguilla* 51:275, 66:341, *Conger conger* 74:383
Elasmobranch: *Scylorhinus stellaris* 71:227
Icefish: *Chaenocephalus aceratus* 57:201
Lungfish: *Amia calva* 59:213
Salmon: *Salmo salar* 74:65
Teleost *Blennius pholis* L. 71:355
Tench: *Tinca tinca* 51:291
Trout: *Salmo gairdneri* 51:303, 55:139,155,175, 61:221,237, 65:223, 68:85, 71:69, 74:77,91,99
Tuna: *Thunnus albacares* 66:193
Fish respiration, *see* Water breathers
Flight
Lung morphometry, soaring charadriiform spp. 68:99
Force-velocity relation
Effective resistance, respiratory system, quick-release technique (human) 60:329
Fossorial animals, *see* Burrowing

Freezing
Morphometry, quick-frozen goose lung 51:319
Functional residual capacity (FRC)
Pulmonary stretch receptors, FRC change (cat) 52:371; Posture, abdominal muscle (human) 53:341; Maximal static pressures (children) 55:39; Sustained increase, breathing pattern (cat) 58:77; Exercise effects, mechanism (human) 70:313

Gas bladder
Primitive lung *Amia calva* 59:213
Gas bubble
N_2-O_2, tissue, growth, decompression 71:299
Gas exchange
Alveolar, alveolar-arterial: Diffusion, perfusion limitations 51:287; Efficiency, high f_R (dog) 54:1; HFO (dog) 54:31; Series, parallel dead space (dog) 54:121; HF assisted ventilation 57:135; CO_2 transfer kinetics (human) 60:21; O_2, CO_2 differences, rebreathing (dog) 60:135; Model, tidally ventilated, non-steadily perfused lung 60:295; 2 sources lung maldistribution (human) 66:11; P_{CO_2} equilibration, hypercapnia (cat) 73:257
Avian egg, embryo: chick 53:173; Variability (chick) 59:339; Shell pore number (161 spp.) 61:1; Late, hyperoxia (chick) 62:217; Shell conductance widely altered early (chick) 74:187,199
Lung, bird: DNP (duck) 57:1; Exercise, hypoxic duck 59:105
Lung, mammal: Respiratory H_2O loss (human) 56:11; Efficacy, HFO (dog) 63:307; Hypoxic vasoconstriction, (human) 68:11; Efficacy, "athletic" vs "normal" animals (dog, pony; calf, goat) 69:101; Indomethacin, lung edema (dog) 69:149; Efficiency, fv in HFO species-specific (monkey) 73:125; And expiration patterns newborn (human) 75:19
Models, theory: Role of diffusion, tissue 56:131; Lung transport characteristics, single-breath gas dynamics 64:253; O_2 diffusion capacity from ventilation-perfusion distributions (human) 69:129
Poikilotherm, air-breathing: Skin (bullfrog) 55:379 Unicameral lung (lizard) 60:277; Skin, environmental O_2, CO_2 (frog) 65:99
Water breathers: Skin (bullfrog) 55:379; Different P_{O_2}'s (lugworm) 57:349; Adaptation air breathing, intertidal rockpool teleost (*Blennius*) 71:355; Skin, C_2H_2, Freon 22 elimination, rest, exercise, lungless salamander 72:229

Gas flow, *see* Valving, inspiratory
Gas mixing
Regional, and gas transport, HFO (human) 62:1; Distribution uptake He, CO, C_2H_2, HFO (dog) 63:201; HFO (human) 66:95; Dead space volume altered, air sac gas composition (goose) 66:109; Defect, inert gas, lung volume (human) 66:355; Longitudinal, HFO (beagle) 71:269
Gasping
Proprioception in apnea (rabbit) 64:57; Apnea, respiratory muscle activity (rabbit) 65:285; Sudden cold water immersion (human) 70:121; Asphyxic, larynx motoneuron activity (rabbit) 70:327
Gas stores
CO_2: Lung blood flow measurement 54:381; Exercise onset (human) 59:265; Eliminating excess, ventilatory response CO_2 (human) 73:379
O_2: Diving mammals 54:269; Intertidal *Sipunculus* 59:361; Acid-base change, skeletal muscle O_2 availability (cat) 70:143
Gas transport
Air-breathing poikilotherm: Winter submerged, summer turtle 53:15
Egg, embryo: Diffusive, convective (chick) 52:137; O_2, hatching chick 53:173; O_2, vitelline, intra-embryo (chick) 71:331
Insect: O_2, moth larva 60:121
Mammal: O_2, regional, acute hypoxia (sheep) 53:161; Muskrat 57:15; Regional, lung volume, HFO (human) 58:279; HFO, effect, bias flow rate (dog) 60:267; From lung, HFO (human) 62:1; Maternal-fetal (pangolin) 64:103; Newborn, smoking mother (rat) 75:129
Models, theory: Bohr coefficient, O_2 delivery (mammal) 54:161; O_2, 2,3 DPG 64:191
Water breathers: O_2, exercising tench 51:291; O_2, acclimation temperature (carp) 52:165
Gestation, *see* Pregnancy
Gill
Respiration, gill vagus ganglia stimuli (carp) 51:241; Ion exchange exercising trout 51:303; Gill arch movement, dorsal gill arch muscle function (carp) 60:39; Gill filament muscle function (carp) 60:59; Counter-current gas transfer model, fish 64:365; Hypoxia chemoreceptor, tuna gill arch 66:193; Ventilation regulation, preparation for metamorphosis (bullfrog) 66:279; Vs skin, O_2 uptake, hyperoxia, hypoxia (eel) 66:341; Filament, raker mechanoreceptors (carp) 69:173; Gill arch proprioceptors (carp) 69:183; Hyperoxia-induced hypercapnia,

ventilation, acid-base status (elasmobranch) 71:227; Morphology, 2 natural waters (trout) 74:77

Glossopharyngeal nerve
Afferents, changes upper airway pressure (cat) 55:341,355; Opiate antagonist, hypercapnia (cat) 74:299

Glucose
Depletion, hypoxia, pulmonary vasoconstriction (rabbit) 63:177; Effect, carotid chemoreceptors, baroreceptors (cat, rat, dog) 72:347; Metabolism, perfused diaphragm, phrenic stimulation (rat) 73:163

Gravitational stress, *see* Acceleration

Growth, *see also* Juvenile, Life stage
Bird: Hyperoxia (chick embryo) 52:1, 58:351; Hyperoxia, cardiomegaly, chick embryo 55:11; Bird egg shell pore number, water conductance, O_2 consumption relation to growth rate (161 spp.) 61:1
Mammal: Maximal static pressure (human) 51:45; O_2 uptake, use throughout life 53:135; Lung mechanics (guinea pig) 56:217; Cold, myocardial capillarity (guinea pig) 59:1; Model, branching ratio, growth (bronchial) tree 63:97; Static pressure, lung volume, age, female swimmers 64:229; Lung gas distribution (children) 65:127; Exercise, ventilatory pattern, peripuberty, trained swimmers 65:351

Guanosine monophosphate (GMP)
Nonadrenergic, noncholinergic inhibition trachea (guinea pig) 73:351

Haldane effect
Whole blood CO_2 dissociation (human) 51:167; Bohr coefficient, O_2 delivery (mammal) 54:161; Developing chick 57:123; CO_2 dissociation curve, temperature (turtle) 63:53

Haloperidol
Dopaminergic modulation breathing pattern (dog) 53:71

Hatching
Blood gases, gas exchange (chick) 53:173

Heart, *see also* Muscle, cardiac
Embryo: Hyperoxia, cardiomegaly, chick 55:11
Mammal: Intermittent hypoxia, right ventricle hypertrophy (rat) 56:253; Chronic mountain sickness effects (2 rat strains) 58:161,171; Myocyte hypertrophy, hyperplasia, high altitude, newborn rat 59:347; Myoglobin, O_2 diffusion, hypoxic rat 63:275; Left ventricle chemosensitive afferents (cat) 63:383; Right, no CO_2 receptors (cat) 73:211
Poikilotherm: Intracardiac shunt (lizard) 71:83

Heart rate, *see* Cardiac frequency

Heat stress, *see* Panting, Thermoregulation

Helium, *see* Inert gases

Hemerythrin
O_2 store intertidal *Sipunculus* 59:361

Hemocyanin
O_2 affinity, intertidal prawn 57:189; O_2 binding (2 hydrothermal vent crustaceans) 71:57

Hemoglobin
Mammal: 4 in sheep 53:31; O_2 binding (rhino, tapir) 56:1; Muskrat 57:15; High O_2 affinity transfused to rat 58:335; Kinetics RBC O_2 uptake, release (goat, sheep, human) 59:71; Postnatal adult Hb development (pangolin) 64:103; High [Hb], exercise, pony 64:339; Aging RBC O_2-binding 68:215; RBC, O_2 equilibrium curves, DPG binding 68:227; Concentration, "athletic" vs "normal" mammals (dog, pony; calf, goat) 69:65; 4 in pig embryo 69:347; Origin [Hb] differences, Andean, Himalayan native highlanders 72:13; Kinetics O_2 uptake, release, RBC 72:65; O_2 transport, marsupial pouch young 72:219; Perinatally (marsupial) 73:69; Bohr effect, human RBC suspensions, dilute Hb solutions 73:363; [Hb] fetal llama 75:327
Poikilotherms: Multiple, fresh water turtle 53:15; No Root effect (*Xenopus*) 61:125
Water breathers: Acclimation temperature, O_2 transport (carp) 52:165; Capillaries, Hb-less icefish 57:201; Concentration, hypoxic trout 61:221; HbO_2 affinity, graded hypoxia (trout) 71:69

Hemolymph
Acidosis, exercise (blue crab) 58:359

Hering-Breuer reflex, *see* Breuer-Hering reflex

Heterogeneity, *see* Inhomogeneity

Heterothermy
Torpor, ground squirrel 57:307

Hibernation
Acid-base status, electrolytes, submerged, cold, anoxic turtle 53:187; Torpor, heterothermic ground squirrel 57:307; Lung morphometry (bat) 59:301

High altitude, *see also* Hypobary, Hypoxia
Avian embryo: Gas diffusive conductance, sea-level eggs at high altitude 60:237; Air cell gas tension measurements, low, high altitude,1914 72:343
Human: Everest summit without supplementary O_2 52:265; Sleep, native low-, highlanders 52:281; Water loading, denitrogenation 54:363; Bohr effect native highlanders 61:197

Mammal: Hypoxia, hypobary, CNS monoamine transmitters (rat) 54:79; Unilateral carotid body excision (goat) 54:353; Lung artery musculation, burrowing (rat, hamster) 56:45; Regional brain blood flow (calf) 58:111; Long term, carotid body resection (awake cat) 58:207; Ventilation, O_2 consumption (guinea pig) 61:357; 2,3-DPG, O_2 transport 64:191; Chronic CO, blood gases, ventilation (rat) 75:193

Mammal, acclimated, acclimating: Oxidative enzymes (alpaca, llama, taruca) 52:303; Sleep, low-, high-altitude natives 52:281; Hypoxia, hypobary, CNS monoamine transmitters (rat) 54:79; Decerebrate cat 54:343; Unilaterally carotid-chemodenervated goat 54:353; 2 rat strains, altitude-susceptible, -resistant, underlying physiology 53:367, 58:161,171, 62:85, 64:81,66:147, 70:229,241; Ventilation, metabolic rate (human) 57:377; Long-term, carotid body resection, awake cat 58:207; Regional brain blood flow (calf) 58:111; Myocyte, capillary, heart Mb increase, neonate rat 59:347; Guinea pig 61:357; Hyperoxia, vagotomy, acclimatized cat 65:365; Carotid body dopamine block (goat) 69:245; β-adrenergic block, O_2 consumption, ventilation (human) 70:195; Origin [Hb] differences, Andean, Himalayan natives 72:13; Rate for completion, altitude involved 74:323

Mountain sickness: Ancient documented report, Asia 52:315, Peru, 52:327; Peru, on-site study 62:125; Acetazolamide dose, cerebral blood flow (human) 72:315

High frequency oscillation, ventilation

High-frequency ventilation (HFV): Lung gas exchange (dog) 54:1; With mechanical ventilation (dog) 54:31; Review 57:135; Apnea, sleep, waking (dog) 60:357; Lung lymph, prostaglandins (sheep) 61:31; Paralyzed dog 61:57; Dead space frequency dependence (dog) 63:213; Flow regimes 63:293; Vs positive pressure ventilation, cardiac output (dog) 75:247

High-frequency ventilation oscillations (HFO, HFOV): Review 57:135; CO_2 output, airway opening pressure (dog) 58:235; Regional gas transport (human) 58:279; Bias flow rate, gas transport (dog) 60:267; Distribution He, CO, C_2H_2 (dog) 63:201; Gas exchange (dog) 63:307; Lung gas mixing (human) 66:95; Catheter tracheal pressure transducers (dog) 68:121; Longitudinal gas mixing (beagle) 71:269; Dead space (monkey) 73:125; Dead space, airway shape, CO_2-producing lung model 73:133; Lung volume, airway closure (human) 74:163

Hill coefficient

O_2 affinity, equilibrium curve (chick embryo) 52:13; Domestic vs wild hen 52:27; Hill number, hemocyanins, 2 hydrothermal vent crustaceans 71:57; Hill number (developing marsupial) 73:69

Histamine, *see* Pharmacological agents and hormones

History

Mountain sickness, ancient documented reports (human), Asia 52:315, Peru, 52:327; Peru, on-site study 62:125; Erythropoietin 63:257; Egg air cell gas tensions, low, high altitude, Aggazotti, in 1914 72:343

Homeothermy

Early ontogeny, altricial nestling (lovebird) 65:197

Hormones, *see* Pharmacological agents and hormones

Humidity, humidification

Exercise dry warm air (human) 67:115

Hydrothermal vent

O_2 binding, 2 deep sea crustacean hemocyanins 71:57

Hyperbary, *see* Diving, Decompression

Hypercapnia, *see also* Acid-base status, Asphyxia, Carbon dioxide, Control of breathing, Ventilatory responses

General: Progesterone plus estrogen induced (virgin guinea pig) 52:259; Fetal surfactant synthesis 57:213; Inspiratory termination (cat) 60:205; Critical P_{O_2}, confined atmosphere (rat) 62:105; D_{O_2}, hypoxia, exercise (dog) 68:1; Inspiratory intercostal, occlusion, vagotomy (dog) 71:201; Progressive, inspiratory loading, fatigue, inspiratory muscles EMG, ventilation (goat) 73:311

Acid-base status: CSF homeostasis (dog) 56:301; Intra-, extracellular, renal effects, prolonged hypoxia (rat) 64:213, 65:331,341

Airways: Tracheal stretch receptor stimulation (dog) 53:325; Alae nasi length (dog) 63:361; Larynx, nose muscle activity (human) 64:177; Cost of breathing, cystic fibrosis (human) 65:257; Larynx muscle activity, sleep (dog) 66:327; Hyperoxic, upper airway dilators (cat) 70:183; Tracheal stretch receptor activity, tracheal muscle contraction (dog) 71:343; Opiate antagonist, activity phrenic, airway dilator nerves (cat) 74:299, Bronchomotor tone, hypoxia, vagotomy, newborn dog 72:271; Upper, resistance, collapsibility (dog) 75:29

Breathing pattern: Breathing route, ventilatory drive (human) 51:209; Diaphragm length (dog) 65:39; Air volume acceleration, expiratory to inspiratory (human) 71:117

Neurobiology: *see* Chemoreceptors, Muscle, Neurons, afferent, sensory, Neurons, central, CNS: 54:55; 56:237; 56:369; 57:279; 60:377; 62:61; 65:113; 65:267; 66:53; 68:319; 70:173; 71:343; 72:361; 73:97; 74:35; 74:275; 74:285; 74:299 74:335

Poikilotherms: Lung volume, garter snake 53:63; Prolonged inflation, lung stretch receptor response, (turtle) 75:75

Water breathers: Hyperoxia-induced, ventilation, acid-base status (elasmobranch) 71:227

Hyperinflation

Gas loss excised lung (guinea pig) 63:129

Hyperoxia, *see also* Ventilatory response to hyperoxia

General: Tracheal explants (hamster) 53:285; Hypoglossal nerve fiber activity (cat) 54:55; Glomectomy (rat) 57:235; Acid-base toad 59:225; Inspiration termination (cat) 60:205; Lung blood flow response time (fetal lamb) 63:43; Carotid, vertebral blood flow (cat) 63:65; Ventilation, metabolism, newborn mouse 63:267; Ventilation, vagotomy, high-altitude acclimatized cat 65:365; Tracheal tone (dog) 69:161; Medulla ECF pH, respiration, glomectomized cat 70:37; Hypercapnic, diaphragm, upper airway dilators, sleep (cat) 70:183; K^+ infusion (cat) 72:59; Sigh, expiratory muscle (cat) 72:303; Maternal, fetal lung growth (rat) 73:225

Avian embryo (chick): Ambient O_2 effect, organic phosphates, RBC 51:141; Growth 52:1, 58:351; Cardiomegaly 55:11; Late, gas exchanges 62:217

Water breathers: Acid base status (trout) 55:139,155,175; Ventilation (lugworm) 57:349; Gill vs skin O_2 uptake (eel) 66:341; Hyperoxia-induced hypercapnia, ventilation, acid-base status (elasmobranch) 71:227

Hyperthermia, *see* Control of breathing: temperature, Temperature effects, Thermoregulation

Hyperventilation, *see also* Ventilatory responses

Surfactant release (rat) 52:69, Everest summit 52:265; Vs metabolism, high altitude (human) 57:377; Vocal cord movement (human) 58:289; CO_2 stores exercise onset (human) 59:265; Diaphragm EMG spectra (human) 61:137; Gravity-induced, brain perfusion 69:237; Eucapnic, breath hold duration (human) 70:369; Post-occlusion (awake human) 75:349

Hypobary, *see also* Acclimation, High altitude

And hypoxia, CNS neurotransmitter metabolism (rat) 54:79

Hypocapnia

Brain stem, ventilation (cat) 55:95; Intracellular acid-base (rat) 55:121; Vocal cord movement, hyperventilation (human) 58:289; Hypoxic, blood flow distribution (duck, goose) 61:21; Post-occlusion, awake human 75:349

Hypoglossal nerve, *see also* Neurons, motor

Single unit activity (cat) 54:55; Afferents for response to changes airway pressure (cat) 55:341,355; Abrupt hypercapnia, hypoxia (cat) 56:237; Pulmonary, superior laryngeal inputs (cat) 56:339; Nicotine (cat) 57:153; Capsaicin, reflexes (cat) 60:377; And phrenic, trigeminal activity (cat) 62:61; And phrenic activity, morphine (cat) 64:289; Reticular mechanisms influence (cat) 66:27; CO_2 narcosis (cat) 70:173; Respiratory-related activity, decerebrate cat 73:175,189; Opiate antagonist, hypercapnia (cat) 74:299

Hypothalamus, *see also* Neurons, central, CNS, Subthalamic locomotor region

Central command, reactions to exercise (cat) 59:313

Hypothermia, *see* Control of breathing: temperature, Temperature effects, Thermoregulation

Hypoxia, *see also* Chemoreceptors, High altitude, Ventilatory response to hypoxia

General: Hypobary, CNS neurotransmitter metabolism (rat) 54:79; Exercise (duck) 59:105; Erythropoietin production (rat) 60:1; 5 min, ventilation (human) 60:227; Endogenous opioids (human) 61:85; Carotid body (goat) 65:113; Tolerance (duck) 67:1; D_{O_2}, exercise (dog) 68:1; Tb, ventilation (kit) 68:359; D_{O_2} from ventilation-perfusion distributions (human) 69:129; K^+ infusion (cat) 72:59; Hypoxic pressor response, RBC deformability (rat, hamster) 72:95, Maternal, fetal lung growth (rat) 73:225; Sensitivity, carbonic anhydrase inhibition (cat) 74:373

Airways: Bronchoconstriction, ventilation (cat) 57:31; Larynx, nose muscle activity (human) 64:177; Larynx muscle activity, sleep (dog) 66:327; Tracheal stretch receptor ac-

tivity, tracheal muscle contraction (dog) 71:343; Bronchomotor tone, hypercapnia, vagotomy, newborn dog 72:271

Avian embryo: Ambient O_2, organic phosphate RBC (chick) 51:141

Breathing pattern: Breathing route (human) 51:209; Diaphragm length (dog) 65:39

Cardiac, circulatory effects: Acute, cardiac output, body regional O_2 transport (sheep) 53:161; Cardiovascular reactions, 2 rat strains 53:367; Diving bradycardia (human) 56:245; Intermittent, right ventricle hypertrophy (rat) 56:253; Body regional blood redistribution (sheep) 57:73; Eucapnic, 96 hr, peripheral blood flow (sheep) 59:197; Hypocapnic, body blood flow distribution (duck, goose) 61:21; Catecholamines, cardiorespiratory responses (dog) 61:167; Carotid, vertebral blood flow (cat) 63:65; Rat heart, Mb-dependent O_2 diffusion 63:275; Myocardial hypertrophy, mitochondrial, capillary density (guinea pig) 70:275

Cell culture: Prostaglandin E_2, rat, pig renal cell lines 70:131

Lung, gas exchange: Simultaneous $D_{L_{O_2}}$, $D_{L_{CO_2}}$ (dog) 52:53; Zymosan effect, hypoxic lung vasoconstriction (dog) 53:295; Critical P_{O_2}, confined atmosphere (rat) 62:105; Lung vasoconstriction, glucose depletion (rabbit) 63:177; Blood, plasma perfused lung (cat, rat, pig) 72:109; Alveolar, permeability edema, inhibited hypoxic lung vasoconstriction (dog) 75:11; Lung vasoconstriction, almitrine, chemodenervation (dog) 74:139

Muscle: Myoglobin, exercise (dog) 53:1; Capillarity, goose hatchling 58:151; Skeletal, capillarity (rat) 62:135; Myocardial hypertrophy, mitochondrial, capillary density (guinea pig) 70:275

Neurobiology, *see* Chemoreceptors, Neurons, afferent, sensory, Neurons, motor: 53:325; 54:55; 56:237; 60:205; 62:61; 63:375; 65:267; 66:41; 67:183; 72:295; 73:97; 74:275

Poikilotherm: Over small lung area, blood flow (bullfrog) 52:181; Lung volume, garter snake 53:63

Prolonged, chronic: Acute hypoxia, pulmonary vasoconstriction (rat) 56:91; Intra-, extracellular acid-base status, renal effects, hypercapnia (rat) 64:213, 65:331,341; Sustained, carotid chemoreceptor and ventilatory responses (cat) 72:361; Lung artery structure, norepinephrine dynamics (dog) 74:211

Water breathers: Ventilation (lugworm) 57:349; Arterial O_2 affinity, capacitance (trout) 61:221; Gill vs skin O_2 uptake (eel) 66:341; Skin D_{O_2} increase, cold submerged bullfrog 70:85; Graded, acute, adaptation (trout) 71:69; Acute, H_2O ionic composition, metabolic acidosis, gill morphology 74:77, high O_2 affinity, transport, [RBC], intra-RBC pH, ion movements (trout) 74:91,99

Hysteresis

4 surfactants 51:79; Developing tadpole lung (bullfrog) 59:231; Sequential open, close lung units (rat) 61:277; Temperature effects, lung (rabbit) 62:31; Volume-pressure, air-, liquid-filled intact lung (rabbit) 63:19; Aerosol airspace dimensions (dog) 67:85

Imidazole, *see* Acid-base status: temperature effects

Immersion, *see also* Diving

Lung volumes, temperature (human) 75:255

Impedance, respiratory

Measurement model 68:145; Upper airway, respiratory cycle (dog) 70:13

Incubation, *see* Embryo

Inert gases

General: Cardiogenic mixing (human) 56:37; Slope alveolar plateau (human) 56:309, 63:327; Taylor laminar dispersion airways (human) 59:131; Low-density gas breathing, vesicular lung sounds (human) 60:145; Gas loss, excised lung (guinea pig) 63:129; Dead space, intra-, extrapulmonary shunt (duck) 63:139,151; Mixing defect, lung volume (human) 66:355; C_2H_2, Freon 22 elimination, rest, exercise, lungless salamander 72:229

Models, theory: Series, parallel (dog) 54:121; Role diffusion, tissue gas exchange 56:131; Tissue washout 63:1; Gas exchange efficacy, HFO (dog) 63:307

Pulmonary regional, $\dot{V}_A/\dot{Q}$ differences: Posture (human) 56:145,169; Lung volume, HFO (human) 58:279; Unicameral lizard lung 60:277; HFO (human) 62:1

Infant, *see also* Life stage

Compliance 68:311; Ventilatory system resistance 73:201

Inhomogeneity, *see also* Distribution

Simultaneous $D_{L_{O_2}}$, $D_{L_{CO_2}}$ (dog) 52:53; Lung blood flow, O_2 diffusion (duck) 63:285; Inflation lobar segments, collateral airway resistance (dog lung) 74:253

Inspiration, *see also* Muscles, respiratory; Valving, inspiratory

General: High negative pressure, $D_{L_{CO}}$ (human) 54:19; Termination, effects hypoxia,

hyperoxia, hypercapnia (cat) 60:205; SO_2 inhalation, larynx denervation (rabbit) 62:203; Alae nasi contraction (dog) 63:361; Increase in asphyxia, proprioception (rabbit) 64:57; Inspiratory-post inspiratory diaphragm EMG (rabbit, human) 64:295; Hypothermia recovery (cat) 64:329; Upper airway resistance (pup) 66:181; Impedance measurement 68:145

Afferent neural influences: Termination, baroreceptor modulation (cat) 52:387; Facilitation, inhibition, pulmonary stretch receptors (rabbit) 53:307; Reflex partition inputs stretch receptors, bronchi, thoracic trachea (rabbit) 60:311; Prolonged, lung stretch receptor response, hypercapnia (turtle) 75:75

Inspiratory duration: K^+-depleted rat 57:23; Increased FRC (cat) 58:77; Scaling (11 mammals) 58:245; Blocked airway mechanoreceptors (rabbit) 59:169; Halothane, age, CO_2 (rat) 61:105; Small resistive load (human) 61:369; Positive, negative pressure pulses, upper airway (rabbit) 66:7; Resistive load, diaphragm (rabbit, human) 69:369; Lung-denervated rat 70:205

Motor input: Early, late phrenic neurons (cat) 61:69; Bulbar neurons (turtle) 64:149; Respiratory reset, bulbo-spinal neurons (cat) 65:155; End-expired volume, vagal cooling, section (dog) 67:347; Phrenic, hypoglossal, mylohyoid activity, lung volume change (cat) 73:97; Facial nucleus, stimulation dorsomedial area, phrenic discharge (rabbit) 75:65

Integument

Amphibian: Gas exchange regulation (bullfrog) 55:379; Gas exchange, environmental O_2, CO_2 (frog) 65:99; D_{O_2}, cold hypoxic submerged bullfrog 70:85; C_2H_2, Freon 22 elimination, rest, exercise (lungless salamander) 72:229

Mammal: Temperature, reaction sudden cold water immersion (human) 70:121; Gas exchange pouch young (marsupial) 72:219

Water breather: Vs gill O_2 uptake, hyperoxia, hypoxia (eel) 66:341; Adaptation air breathing, intertidal rockpool teleost (*Blennius*) 71:355

Interaction hypoxia, hypercapnia, *see* Control of breathing, Ventilatory responses

Intercostal, *see also* Chest wall, Muscles, respiratory

Nerve stimulation (cat) 52:387, 60:205; Morphine, intercostal-to-phrenic reflex (cat) 62:79; CO_2 narcosis, motor nerve activity (cat) 70:173

Intertidal

Prawn 57:189, Lugworm 57:349, Worm 59:361; Air-breathing rockpool teleost (*Blennius*) 71:355

Intracellular, *see also* Acid-base status: intracellular

Myoglobin, hypoxic exercising dog 53:1; Hypocapnia (rat) 55:121; Muscle, pH regulation, prolonged hypoxia (rat) 65:331

Red blood cell, q.v.: 61:209, 74:65,99

Invertebrates

Annelids: lugworm *Arenicola marina* 57:349; *Sipunculus nudus* 59:361

Crustacea: prawn *Palaemon elegans* 57:189; blue crab *Callinectes sapidus* 58:359; Crayfish *Astacus leptodactylus* 65:235, 69:359; Deep-sea hydrothermal vent *Bythograea thermydron*, *Alvinocaris lusca* 71:57

Insects: moth larva *Carpocapsa saltitans* 60:121

Onychophoran: *Peripatus acacioi* 60:75

Ionic composition

CSF, carbonic anhydrase block (dog) 69:257; Nonisotonic solutions, human bronchial muscle 69:277; 2 natural waters, acid-base status, gill morphology, hypoxic trout 74:77

Ion exchange

Mammal: Catecholamines, myocardial cell 56:289

Water breather: Gill, exercising trout 51:303; Gill, hyperoxic trout 55:175; Exercising blue crab 58:359; RBC trout 65:223

Ion transport

CSF, Na^+-coupled Cl^- transport (dog) 56:301

IPC, *see* Chemoreceptors, CO_2, intrapulmonary (IPC)

Isoproterenol

Tracheal pouch relaxation (guinea pig) 56:205; Catecholamines, ion exchange myocardial cell 56:289

Juvenile, *see also* Growth, Life stage

Children: Maximal static pressure, growth 51:45; Lung elastic behavior 52:229; Maximal static pressures, thorax configuration 55:39; Lung gas distribution 65:127; Breathing pattern, ventilation, exercise, trained swimmers 65:351; Postnatal lung development, growth 67:247,269; Compliance 68:311; Asthma, airway obstruction, maldistribution ventilation 69:287; Ventilatory system resistance 73:201; Maturation carotid chemoreceptors 74:55; Breathing

pattern, O_2 uptake, ventilation, untrained 75:225
Mammal: Naloxone, control of breathing (piglet) 51:119; Hypoxic pulmonary vasoconstriction (rat) 56:91; Acute pulmonary hypertension (dog) 60:169; Diaphragm, larynx muscle activity, sleep, awake dog pup 60:95; Acute pulmonary hypertension (dog) 60:169; Breathing pattern, upper airway resistance (pup) 66:181; Hypoxia, hypercapnia, ventilation (Weddell seal) 67:197; Stress relaxation lung (rat) 67:295; Malnutrition, lung development (rat) 68:29; Bronchoconstriction post mortem, Ca^{2+} (guinea pig) 68:41; O_2 consumption, blood affinity, pouch young (marsupial) 72:219
Poikilotherm: Small hypoxic lung area (bullfrog) 52:181; Index of P_{O_2} variation effect (moth larva) 60:121

Kidney
Acid base status hyperoxic trout 55:155; Prolonged hypoxia, acid-base status, hypercapnia, renal compensation (rat) 65:331,341; Hypoxia, prostaglandin E_2, renal cell lines (rat, pig) 70:131

Kinetics
4 sheep hemoglobins 53:31; RBC O_2 uptake, release, unstirred layer (goat, sheep, human) 59:71; Pulmonary CO_2 transfer (human) 60:21; O_2 release HbO_2, capillary P_{O_2} 63:79; Intrapleural liquid spreading (dog) 65:13; O_2 transfer conductance RBC 67:209; O_2 consumption, exercise on-transient (pony) 70:251; O_2 uptake, release, RBC 72:65; C_2H_2, Freon 22 elimination, rest, exercise (lungless salamander) 72:229; O_2 transfer, RBC, temperature (turtle) 75:371

Lactate
Exercise (tench) 51:291, (trout) 51:303; Submerged, cold, anoxic turtle 53:187; Affects O_2 affinity (prawn) 57:189; Infusion (lizard) 60:253

Larva, *see also* Life stage
Twitching, index of P_{O_2} variation effect (moth larva) 60:121; Allometry RBC O_2 binding, hematology (salamander) 70:73

Larynx, *see also* Superior laryngeal nerve
General: Resistance loading (human) 54:307; Regulation lung fluid flow (fetus) 57:47; Vocal cord movement, hyperventilation (human) 58:289; Muscle activity, sleep, awake (dog pup) 60:95; SO_2 block laryngeal receptors, laryngeal denervation (rabbit) 62:195,203; Stimulation, sleeping lamb 63:31; Larynx, nose muscle activity (human) 64:177; Cooled, upper airway dilators (dog) 66:61; Apnea, graded anesthesia (piglet) 66:235; Muscle activity, sleep, awake, hypoxia, hypercapnia (dog) 66:315,327; Constriction, breathing pattern (dog) 67:53; Motoneuron activity, asphyxia (rabbit) 70:327; Isolated, cigarette smoke, f_R (dog) 73:301
Receptors, afferents, *see* Neurons, afferent, sensory

Leukotriene
Role in endotoxic lung injury (sheep) 71:259

Life stage, *see* Adolescence, Age, Birth, Development, Embryo, Fetus, First breath, Gestation, Growth, Hatching, Incubation, Infant, Juvenile, Larva, Metamorphosis, Nestling, Newborn, Ontogeny, Perinatal, Postnatal, Pregnancy, Prenatal, Puberty, Pupa, Tadpole

Litter size
Rat 72:171,187,195

Liver
Glucose stimulation chemoreceptors, baroreceptors (cat, rat, dog) 72:347

Loading
CO_2 or dead space: Ventilation, REM, SWS sleep (human) 75:183
Elastic: Sleep, ventilation (human) 55:103; Or breath hold, respiratory muscle activity (human) 72:151
Pressure: Air sac, breathing pattern (hen) 58:197; Sustained FRC increase, breathing pattern (cat) 58:77
Resistive: Load detection 51:131; Expiration, larynx (human) 54:307; Medulla inspiratory neuron activity (vagotomized cat) 60:193; Small (human) 61:369; Expiration, larynx (dog) 67:53; To fatigue, closing volume (human) 68:137; Inspiratory, diaphragm transmission fatigue (rabbit) 69:307; Diaphragm post-inspiratory ramp activity (rabbit, human) 69:369; Inspiratory, hypercapnia, EMG inspiratory muscles, ventilation (goat) 73:311
Resistive, elastic: SO_2, vagotomy, expiration (rabbit) 56:359

Lung, *see also* Morphometry, Pleura, Pulmonary, Neurons, afferent, sensory, Surfactant
General: Primitive, muscular basis (*Amia calva*) 59:213; Unicameral (lizard) 60:277; Lymph dynamics, HFV, prostaglandin (sheep) 61:31; Hyperinflation, gas loss (guinea pig) 63:129; Gas exchange conductance, HFO (dog) 63:307; Gas distribution children 65:127; Inhaled particle clearance

(non-smokers) 67:147; Plasma-lymph barrier, dextran (sheep) 68:239; Structure, "athletic" vs "normal" animals (dog, pony; calf, goat) 69:81; Endotoxic injury, leukotriene B_4 (sheep) 71:259; Hyperinflation, vagus cooled, trachea muscle tension (dog) 72:35; CO_2-producing model, airway shape, dead space, HFO 73:133

Neurobiology: Inflation, early-, late onset phrenic motoneuron activity (cat) 61:69, motoneuron response (cat) 62:153, interaction mechano-, chemoreceptors (dog) 67:183; CO_2/H^+ receptors (rabbit) 63:227; Acute, chronic denervation, breathing pattern (rat) 70:205; Denervation, breathing rest, sleep, heart, heart-lung transplant (human) 72:131

Lung development, growth

Human 67:247,269; Development, protein malnutrition, young rat 68:29; Maternal, fetal, litter size 72:171, surgically reduced litter size 72:187, unilateral maternal pneumectomy 72:195, hypoxia, hyperoxia 73:225, maternal exercise or cold (rat) 75:309

Lung function tests

Pulmonary stretch receptors, FRC (cat) 52:371; Marathoner 52:349; Lung sounds, small-airway disease (smokers) 53:203

Lung mechanics

Hyperinflation, lung elasticity (human) 54:295; Dynamic mechanics (monkey) 55:47; Parenchyma, bronchi diameter (dog) 55:223; Fluid flow (lamb fetus) 57:47; Units, sequential open, close (rat) 61:277; Volume-pressure, air-, liquid-filled (rabbit) 63:19; Tissue tension, glycosaminoglycans 66:247; Aerosol airspace dimensions (dog) 67:85; Lung mechanics (manatee) 68:63; Design, soaring, diving (5 charadriiform spp.) 68:99; Fluid-filled, air opening pressure, fetal, adult rat 68:279,293; Vagal blockade, elastic recoil (human) 70:265; ^{99m}Tc-DTPA clearance (sheep) 72:375; Moving lung border, pleural surface, liquid pressure (dog) 75:105,117; Volumes, immersion, temperature (human) 75:255

Lung, parabronchial, *see* Bird respiration

Lung sounds

Vesicular, low density gas breathing (human) 60:145

Lung vasculature

Musculation, burrowing, hypoxia (rat, hamster) 56:45; Hypoxic pressor response, chronic hypoxia, normoxia, RBC deformability (rat, hamster) 72:95; Blood, plasma perfused lung (pig, rat, cat) 72:109; Prolonged hypoxia, artery structure, norepinephrine dynamics (dog) 74:211

Lung volume, *see also* Distribution, Regional lung volumes

Maximal static pressures, growing children 51:45; Extrathoracic airways (human) 52:217; Marathon (human) 52:349; Hypoxic garter snake 53:63; End-expiratory, thoracoabdominal movement (human) 53:273; Hyperinflation, elasticity (human) 54:295; Growing guinea pig 56:217; Slope alveolar plateau (human) 56:309, 63:327; HF assisted ventilation 57:135; Expansion, cardiovascular effects (dog) 57:259; Regional gas transport, HFO (human) 58:279; Diaphragm, larynx muscle activity (dog pup) 60:95; Young female swimmers 64:229; Age, human adult 65:1; Stature, adolescent humans 65:139; Effect on inert gas mixing (human) 66:355; End-expiratory, vagotomy, breathing pattern (dog) 67:347; Inflation, CO_2 stimulus, phrenic activity (dog) 67:367; Inflation volume, breathing pattern, awake, asleep (human) 73:145; Low, HFO, airway closure (human) 74:163

Lymph

Sheep: dynamics, lung, HFO, prostaglandin 61:31; Flow, positive end-expiratory pressure 64:125; Plasma-lymph barrier, dextran 68:239

Macrophages

Alveolar, surfactant, fetus, newborn monkey 73:289

Malnutrition

Protein, lung development (young rat) 58:29

Mammals, *see also* Fetus, Newborn

Alpaca: 52:303

Antelope: dik-dik *Rhynchotragus kirkii* 56:183

Armadillo: *Chaetophractus villosus* 67:239

Bat: *Pipistrellus subflavius* 59:301

Camel: 70:97

Cat: 55:131, 56:385, 72:109, 72:347, 74:115,265; kitten 58:253, 68:359

Cattle: 55:131; calf 58:111, 69:1–127; calf, Friesian 69:299, Belgian White and Blue 69:299

Coyote: 54:173, 55:131

Deer mouse: 55:367

Diving mammals: 54:269

Dog: 54:173, 55:131, 61:185, 66:205, 69:1–127, 72:347; pup 60:95, 66:181; basenji, greyhound 63:339; beagle 71:269

Fox: 54:173, 55:131

Goat: 54:331,353, 56:51, 59:71, 64:203, 65:113, 69:1–127, 245, 70:63, 73:311, 74:335
Guinea pig: 51:21, 52:259, 53:225, 56:217, 59:1,143; 61:347,383, 63:129, 67:323, 68:41, 70:275, 73:155,351, 74:115
Hamster: 53:285, 55:317, 56:45, 56:81, 66:157, 72:95
Horse: 55:131; pony 64:339, 68:77, 69:1–127, 70:251
Human: 59:71,143, 63:241, 64:177,295, 67:115,147,171, 68:11,203,331,345, 69:369,387, 70:113,195,369, 71:247; 72:13,151,163, 73:145,325, 74:151,323,355, 75:173,183,199, athlete 52:349, 53:129,263, 64:229, 65:351 66:135, child 51:45, 52:229, 55:39, 65:127,351, 68:311, 69:287, 73:201, 74:55, smoker 53:203, 56:327, twins 75:211, women 56:229, 62:117, 64:229
Llama: 52:303, 75:327
Manatee: *Trichechus manatus* 68:63
Marsupial: tammar wallaby *Macropus eugenii* 72:219, 73:69, 75:1
Monkey: bonnet *Macaca radiata* 55:47, crab-eating *Macaca fascicularis* 71:375, *Rhesus* 73:125, *Macaca nemestrina* 73:289
Mouse 56:81, 61:335, 63:267, 74:115
Muskrat: 57:15
Pangolin: *Manis pentadactyla* 64:103
Pig: 64:113, 72:109, 74:115; piglet 51:119, 66:235; miniature 70:343
Rabbit: 56:261, 62:169,181, 63:177,227,347, 64:57,277,295, 65:285, 66:61,71,367, 67:335, 69:195,307,369, 71:147, 72:1, 73:1, 74:115,265, 75:65
Rat: 55:131, 61:105, 62:135, 65:85,331,341,379, 66:225, 67:225, 68:29,269,279,293, 69:227, 70:51,205, 72:47,83,95,109,171,187,195,347, 73:43,163,225, 74:35,115,383, 75:51,129,193,309; 2 strains 53:367, 58:161,171, 62:85, 64:81, 66:147, 70:229,241
Reindeer: 59:279
Rhinoceros, white: *Cerathoterium sinum* 56:1
Seal: Weddell 67:197
Sheep: 53:31, 53:161, 55:205, 59:71, 60:109, 61:31, 64:125, 67:283, 71:259, 73:339, 75:89
Shrew: *Suncus etruscus* 55:131
Squirrel, ground: *Spermophilus tereticaudus* 57:307
Tapir: 56:1
Taruca: *Hippocamelus antisensis* 52:303
Wolf: 54:173, 55:131
Woodmouse: 55:131

Mass coefficient
Ontogeny vs phylogeny 55:1

Mechanics of breathing, *see also* Airways, Abdomen, Bronchi, Chest wall, Compliance, Distribution, Hysteresis, Loading, Lung mechanics, Morphometry, Pleura, Posture, Pressure-volume relation, Resistance, pulmonary, Surface tension, Surfactant, Transpulmonary pressure, Ventilation-perfusion
General: Maximum static pressure (child) 51:45, 55:39; Resistive load detection 51:131; Static mechanics (rabbit fetus) 51:195; Marathon (human) 52:349; End-expiratory volume, thoracoabdominal movement (human) 53:273; Growing guinea pig 56:217; HF assisted ventilation 57:135; Respiratory pump, non-REM sleep (human) 63:241; Diaphragm contractility, respiratory mechanics, 13 mammals 64:267; Vagus, mechanics, pressures, control (rat) 73:43; Compliance, conductance, total respiratory system vs lung, histamine (guinea pig) 73:155
Air-breathing poikilotherms: Garter snake 64:13
Fetus, newborn: Newborn lung denervation (rat, rabbit) 67:137

Mechanoreceptors, *see* Neurons, afferent, sensory

Medulla, *see also* Chemoreceptors, central, Neurons, central, CNS, Respiratory centers, Solitary tract
General: ECF, CSF acid-base changes (cat): Arterial blood 53:379; Ventral medulla, arterial pH 55:193; Chemodenervation 58:123; Control breathing 59:117; Phrenic afferent input lateral reticular area 59:155; Nonvagal inputs, dorsal, ventral inspiratory neurons 60:193; Hyperoxia, glomectomy 70:37
Expiratory neurons: CO_2 (cat) 57:279; Split brain (rabbit) 57:293; Nuclei ambiguus, solitarius destruction (cat) 58:323; Capsaicin-induced reflexes (cat) 60:377; Pontomedullary junction (cat) 61:153
Intermediate areas (cat): Cooled, airway receptors, phrenic response 58:51; Cooled, hypoxia, tracheal tone 69:335
Ventrolateral areas: Nicotine (cat) 57:153; Nicotine, GABA, tracheal tone (cat) 64:351; Cooled, respiratory, vasomotor responses (rat) 74:35

Menstruation
Hypoxic drive 56:229

Metabolic rate, *see also* Oxygen consumption
Basal, phylogeny, ontogeny 55:1; Vs ventilation, high altitude (human) 57:377; Relia-

bility RQ measurement 60:387; Hyperoxic small-mammal newborn (mouse) 63:267; Hatchling-adult mass-independent metabolism, altricial-precocial continuum (192 spp) 65:69

Metabolism
Glucose, perfused hemidiaphragm, phrenic stimulation (rat) 73:163

Metamorphosis
Static lung compliance (bullfrog) 59:231; Preparation for, ventilatory regulation gill, lung (bullfrog) 66:279

Methods and techniques
Apparatus: f_R measure by microwave (mouse) 56:73; Pattern of breathing, effect apparatus (human) 61:255; Catheter pressure transducer, tracheal pressure measure HFO (dog) 68:121; Face mask, attention to breathing (human) 72:123; Servo-respirator 73:87; Microsphere size, blood flow distribution 74:1
Chemical variables: Intracellular pH RBC 61:209; H_2CO_3 pK, temperature effect, trout blood 61:237
Gases: Whole blood CO_2 dissociation curve, Haldane effect (human) 51:167; Total, membrane component D_L (dog) 51:183; Mixed venous P_{CO_2}, exercise (human) 59:379; Reliability RQ measure, open-circuit metabolic chamber 60:387; CO_2 production thin tissue (chick blastoderm) 70:1; Factors, accurate measure A-a P_{CO_2} 73:257
Physiological variables: Recruitment pulmonary capillary bed (human) 54:19; Pulmonary blood flow 54:381; Bias flow rate, gas transport, HFO (dog) 60:267; Effective respiratory resistance, quick release technique (human) 60:329; Diaphragm EMG spectra utility 61:137; 5 methods analysis pressure-volume curve (rat) 66:147; Axial diffusion, expansile alveolar duct 73:273; Transient added resistance, volume, pressure (human) 74:239

Microcirculation
Blood flow, hypoxia, small lung fraction (bullfrog) 52:181

Microwaves
f_R measure, heat load (mouse, hamster) 56:73,81

Minute ventilation, *see* Breathing pattern, Ventilation

Mitochondria
Chick embryo: 1st day, nonmitochondrial CO_2 production, 71:133
Heart: Scaled to body mass (mammals) 55:131; Chronic bradycardial pacing (rabbit) 72:1
Muscle: Icefish 57:201; Soleus, distribution, volume, training (rat) 64:1; Diaphragm, plantaris, respiration (rat) 67:225; Cardiac, skeletal, "athletic" vs "normal" mammals (dog, pony; calf, goat) 69:27,65; Diaphragm, phrenic stimulation, glucose metabolism (rat) 73:163

Mixed venous blood
Spinal cord heated (pigeon) 57:89; Measure, P_{CO_2}, exercise (human) 59:379; CO_2 load, IPC response (duck) 66:53

Models, theory
General: Justification of 3/4 mass exponent, scaling 52:149; Oxidative enzymes, high altitude (alpaca, llama, taruca) 52:303; Ventilatory exercise stimulus 59:55; CO_2 store exercise onset (human) 59:265; Flow regimes, HFV 63:293; P_{O_2} distribution cylinder models 64:241; Eggshell conductance, Fick's or Stefan's law 65:213; Gravity-induced hyperventilation, brain perfusion 69:237; Intracardiac shunt (lizard) 71:83; N_2-O_2 gas tissue bubble growth, decompression 71:299
Gas exchange: Skin respiration (bullfrog) 55:379; Tissular, role of diffusion 56:131; Transient alveolar-arterial O_2, CO_2 differences, rebreathing (dog) 60:135; Exchange efficacy, HFO (dog) 63:307; Lung transport characteristics, single-breath, noninvasive gas measure 64:253; Slope alveolar plateau (human) 72:257; Elimination excess CO_2, ventilatory response CO_2 (human) 73:379; And expiratory airflow patterns, newborn human 75:19
Gas transfer, transport: Bohr coefficient magnitude, O_2 delivery (mammal) 54:161; Oxygen gradient, moth larva O_2 delivery 60:121; Rate O_2 release HbO_2, capillary P_{O_2} 63:79; Role 2,3-DPG, O_2 transport, high altitude 64:191; Counter-current gas transfer (fish gill) 64:365; RBC O_2 equilibrium curve, DPG binding 68:227; Blood flow distribution, 18-d chick embryo, chorioallantois 71:315; Kinetics O_2 uptake, release, RBC 72:65; Organ oxygenation, changed blood O_2 carrying properties 72:211
Mechanics of breathing: Resistive load detection 51:131; Diffusion, perfusion limitations 51:287; Gas density dependence, expiratory flow 55:125; Elastic behavior child lung 52:229; Series, parallel dead space 54:121; Airway flow dynamics, velocity profiles 55:255; Model verification, expiratory duration (rabbit) 59:239; Tidally ventilated,

non-steadily perfused lung 60:295; Pressure-flow relation, zones II, III (dog) 61:115; Inert gas tissue washout 63:1; Branching ratio, growth, (bronchial) tree 63:97; vertex analysis 65:245; Pleural liquid distribution (dog) 65:13; Impedance measurement 68:145; O_2 diffusion capacity from ventilation-perfusion distributions (human) 69:129; Interrupter measure lung resistance 70:301; CO_2-producing lung model, dead space, airway shape, HFO 73:133; Airway closure, liquid film instability 75:141; Jet ventilator, flow, pressure 75:235

Water breathers: O_2 extraction, ventilatory requirement fish 70:221

Morphometry

Airways: Dik-dik 56:183; Upper bronchial tree (human) 59:289

Heart: Hyperoxic chick embryo 55:11; Mitochondrial volume scaled to body mass (mammals) 55:131; "Athletic" vs "normal" mammals (dog, pony; calf, goat) 69:27,65

Invertebrate: Tracheal system (onychophoran) 60:75

Lung, bird: Quick-frozen goose lung 51:319; Passerine spp. 55:291; 5 charadriiform spp. 68:99

Lung, mammal: Total, membrane D_L (dog) 51:183; D_L, lungs fixed in zones II, III conditions (rabbit) 52:41; D_L, maximal O_2 consumption, 2 methods (canids) 54:173; Axial (hamster, human, rat) 55:317; Hibernating bat 59:301; Postnatal development (human) 67:247,269; D_L, "athletic" vs "normal" animals (dog, pony; calf, goat) 69:81; Newborn, smoking mother (rat) 75:129

Muscle: Lung artery, burrowing, hypoxia (rat, hamster) 56:45; Hb-less icefish 57:201; Soleus mitochondrial distribution, volume, training (rat) 64:1; "Athletic" vs "normal" mammals (dog, pony; calf, goat) 69:27,47; Capillarity, slow, fast muscle (eel, rat) 74:383

Motoneurons, respiratory, *see* Neurons, motor

Mountain sickness, *see* High altitude

Mouth occlusion pressure, *see* Airways, Occlusion pressure

Mucus

Methacholine, airway reactivity (dog) 62:47

Muscle, cardiac

Hyperoxia, cardiomegaly, chick embryo 55:11; Intracellular acid base status, hypocapnia (rat) 55:121; Mitochondrial volume scaled to body mass (mammals) 55:131; Catecholamines, ion exchange (rabbit) 56:289; Capillarity goose hatchling 58:151; Capillarity, cold, growing guinea pig 59:1; Intracellular pH regulation, prolonged hypoxia (rat) 65:331; Capillarity, "athletic" vs "normal" mammals (dog, pony; calf, goat) 69:47; Mitochondrial, capillary density, growth, hypertrophy (guinea pig) 70:275

Muscle, skeletal, body

General: Myoglobin, hypoxic, exercise (dog) 53:1; Endurance (human) 53:47; Stimulation, breathing inhibition (cat) 54:211; Extracellular carbonic anhydrase (rabbit) 56:269; Blood flow, exercise (dog) 61:317; Amyl nitrite inhalation (rabbit, cat) 62:181; Mitochondrial volume, distribution, training (rat) 64:1; Static contraction, subthalamic locomotor region lesions (cat) 66:215; Length, endurance (human) 67:171; Training, mitochondrial respiration (rat) 67:225; "Athletic" vs "normal" mammals (dog, pony; calf, goat) 69:27; Motor cortex stimulus, blood flow distribution, temporal variability, exercise (dog) 74:1

Acid-base status: Intracellular, hypocapnia (rat) 55:121; Anesthesia, exercise (rat) 65:85; Intracellular pH regulation, prolonged hypoxia (rat) 65:331; Change, O_2 availability (cat) 70:143

Capillary supply: *see* Capillary

Muscle, skeletal, respiratory, *see also* Abdomen, Diaphragm, Expiration, Hypoglossal nerve, Inspiration, Intercostal, Phrenic nerve

General: End-expiratory volume, thoracoabdominal movement (human) 53:273; Pattern rib cage shape change (human) 54:197; Nicotine (cat) 57:153; Expiratory loading (cat) 57:247; Sciatic stimulation (dog) 58:65; Gill arch,filament muscles (carp) 60:39,59; Larynx, diaphragm muscles, sleep, wake (dog pup) 60:95; Static pressure, lung volume, female swimmers 64:229; Asphyxic apnea, opisthotonus (rabbit) 65:285; Positive pressure breathing, anesthesia (human) 65:303; Intracellular pH regulation, prolonged hypoxia (rat) 65:331; Origin, distribution blood flow (sheep) 67:283; Ventral rib cage, contractile properties (dog) 68:301; Upper airway closure, open, not entirely muscular (rabbit) 71:147; Breath hold, elastic load (human) 72:151; Motor cortex stimulus, EMG latencies intercostal, truncal muscles (human) 73:325

Expiratory: Upper airway resistance (pup) 66:181; Posture (dog) 67:311; Abdominal muscle activity (dog) 70:159; Abdominal, costal, posture, origin afferent stimulus

(dog) 70:359; Inhibition, hyperoxic sigh (cat) 72:303; Triangularis sterni, abdomen, posture (human) 74:151
Expiratory plus inspiratory: Endurance (human) 53:47; Intercostals, posture, sleep (cat) 56:385; Cost of breathing, cystic fibrosis (human) 65:257
Inspiratory: Diaphragm, upper airway, airway negative pressure (rabbit) 54:259; Diaphragm, genioglossus (cat) 57:153; Diaphragm, laryngeal muscles (pup) 60:95; Diaphragm, upper airway muscle, posture (cat) 60:181; Asphyxia, proprioceptive effects (rabbit) 64:57; Upper airway resistance (pup) 66:181; Length, endurance (human) 67:171; Bronchial, tracheal stretch receptor influence (rabbit) 67:335; Intercostal, hypercapnia, airway occlusion, vagotomy (dog) 71:201; Inspiratory resistive load, hypercapnia, EMG, ventilation (goat) 73:311

Muscle, smooth, respiratory
Airway: Topographical differences, drugs (dog) 52:245; Contractility, cooled, warmed (guinea pig) 53:225; Effect on larynx mechanoreceptors (dog) 61:289; Histamine, methacholine, basenji, greyhound 63:339; Bronchial, methacholine response (human) 58:223, intracellular Ca^{2+} (human) 67:127, sympathetic innervation (human) 68:53, Ca^{2+} ionophore-induced contraction 71:157; Ca^{2+} antagonist role, responses to spasmogens, antigen (human) 74:15
Airway, upper: Augmented breath (dog) 53:87; Afferent activity (dog) 58:41; Sciatic stimulation, muscle response (dog) 58:65; Dilators, hyperoxic hypercapnia, sleep (cat) 70:183
Trachea: Hypoxia, hypercapnia, tracheal stretch receptors (dog) 53:325; Relaxation, exercise (dog) 56:61; Pouch relaxation (guinea pig) 56:205; Ca^{2+} channels (human, guinea pig) 59:143; Sensitization-induced Na^+, Ca^{2+} influx (guinea pig) 60:157, 67:323; Relaxation, high K^+, Ca^{2+}-channel action (guinea pig) 61:43; Trachea, bronchi, ultrastructure neuromuscular control (human) 63:109; Tone, effect nicotine, GABA medulla (cat) 64:351; Tone, hypoxia, ventilatory response hypoxia (dog) 66:41; Age, dystrophy, drugs (hamster) 66:157; Contracted, effects P_{CO_2}, pH, Ca^{2+} uptake (rat trachea) 66:259; Presynaptic α_2 receptors inhibit norepinephrine release 70:25; Stretch receptor, tracheal muscle activity (dog) 71:343; Excitatory, inhibitory innervation, pharmacology (monkey) 71:375; Tension, lung inflation, vagus cooled (dog) 72:35; Ultrastructure, sensitized guinea pig 72:283; In vivo, in vitro response cooling, sensitized rabbit 73:1
Pulmonary arteries: Burrowing, hypoxia (rat, hamster) 56:45; Vasoconstriction, hypoxia, glucose depletion (rabbit) 63:177

Myocardium, *see* Heart, Muscle, cardiac

Myoglobin
Diving mammals 54:269; Muscles, developing hen 58:137; Heart, high altitude (neonate rat) 59:347; Role, O_2 diffusion, hypoxic heart (rat) 63:275

Narcosis
CO_2, respiratory motor nerve activity (cat) 70:173

Nestling
Early ontogeny ventilation, homeothermy (lovebird) 65:197

Neurogenesis, *see also* Brain stem, Control of Breathing, Neurons, central, CNS, Respiratory centers
Split respiratory center (cat) 57:225; Kainic acid, two respiratory control areas (cat) 58:323; Split medulla, natural HFO phrenic neurogram (rabbit) 64:277; Resetting, bulbo-spinal inspiratory neurons (cat) 65:155; CO_2 narcosis (cat) 70:173

Neurons, *see also* Brain, Electrophysiological recording

Neurons, afferent, sensory, *see also* Baroreceptors, Chemoreceptors, Glossopharyngeal nerve, Splanchnic nerve, Superior laryngeal nerve, Vagus nerve
General: Intercostal, abdominal muscle afferent effects on pneumotaxic center (cat) 52:85; Airway irritant, lung stretch receptors, cooled medulla intermediate area, phrenic response (cat) 58:51; Splanchnic, increase respiration (cat) 58:187; Stimulation group III, IV muscle afferents, pulmonary resistance (dog) 59:185; Proprioceptors inspiratory muscle, role in asphyxia (rabbit) 64:57; Interaction mechanoreceptors, chemoreceptors (dog) 67:183; Nose temperature-sensitive "flow" receptors (rat) 75:51
Airway: Mechanoreceptors, hypoxia, hypercapnia (dog) 53:325, bronchospasm (human) 56:195, upper airway afferent activity (dog) 58:41, SO_2 block, breathing pattern (rabbit) 59:169, inhibition, larynx cooling

(dog) 66:61, laryngeal reflex, cigarette smoke (dog) 73:301; Pressure receptors, (cat) 55:341,355, pharynx (dog) 57:113; Stretch receptors, newborn, adult dog 52:361, bronchi, thoracic trachea, reflexes (rabbit) 60:311, tracheal, cooling (dog) 66:205, influence on inspiratory muscle (rabbit) 67:335, trachea (dog) 71:343, static pressures, isolated dog trachea 75:289

Larynx: Mechanoreceptors, flow-sensitive (dog) 54:317, function (dog) 61:289, negative airway pressure, larynx paralysis (dog) 57:113, 74:25, effect on hypoglossal, phrenic activity (cat) 55:341, 55:355, 56:339; Cold receptor properties (dog) 59:35, 64:45, 71:287, (cat) 54:41, cold air, heliox (cat) 67:379

Lung: Vagal afferents, nonmyelinated (rabbit) 55:63, capsaicin-induced reflexes, medulla (cat) 60:377, lung inflation, motoneuron response (cat) 62:153, firing pattern, lung stiffness (rabbit, cat) 68:161, C-fiber, cooled vagus (dog) 64:29, "alveolar" receptor (dog) 67:159, stretch, cooled vagus, reciprocal action, tracheal tension (dog) 72:19,35, stimulation, diaphragm vasodilatation (dog) 75:279; Mechanoreceptors, FRC change 52:371, sustained (cat) 58:77, inspiration facilitation, inhibition (rabbit) 53:307, positive end-expiratory pressure (rabbit) 56:261, hypoglossal, phrenic motoneurons (cat) 56:339, loading, SO_2, vagotomy, expiration (rabbit) 56:359, medulla intermediate areas cooling (cat) 58:51, panting pigeon 75:267; Stretch receptors, tachypnea, amyl nitrite inhalation (rabbit) 62:169, cooled vagus (dog) 64:29, dog 68:319; CO_2-sensitive, gravity, CO_2 breathing (human) 71:247, airway pressure (alligator) 74:285, prolonged inflation, hypercapnia (turtle) 75:75

Phrenic: To lateral medullary reticular area (cat) 59:155; Inhibitory, excitatory effects (cat) 69:321

Water breathers: Gill arch, gill filament, raker mechanoreceptors (carp) 69:173,183

Neurons, central, CNS, *see also* Bulbospinal, Brain stem, Cerebellum, Cerebral cortex, Decerebration, Medulla, Pneumotaxic center, Pons, Respiratory centers, Spinal cord, Split brain

Mesencephalic tegmentum, bout respiration, respiratory rhythm (carp) 51:95; Medullary, apneusis, pneumotaxic center (cat) 51:361; Central sciatic nerve stimulation, diaphragm, upper airway muscle response (dog) 58:65; Respiration-related, medial nuclear complex, solitary tract (cat) 64:135; Pons, medulla reticular formations, phrenic, hypoglossal, trigeminal activity (cat) 66:27

Neurons, motor, *see also* Brain, Hypoglossal nerve, Phrenic nerve, Recurrent laryngeal nerve, Trigeminal nerve, Vagus nerve

General: Hypoglossal, phrenic, upper airway pressure (cat) 55:341; Bulbo-spinal respiratory effects, splanchnic nerve stimulation (cat) 51:229; Stimulation branchial vagus ganglia (carp) 51:241; Split brain, hypercapnia (cat) 57:225

Airways: Tracheal excitatory, inhibitory innervation, pharmacology (monkey) 71:375; Phrenic, hypoglossal, facial whole-nerve, single unit activity (decerebrate cat) 73:175,189

Expiratory: Laryngeal motoneurons (cat) 54:67; Split-respiratory center (cat) 57:225; Medullar, CO_2 (cat) 57:279; Split brainstem (rabbit) 57:293; Pontomedullary junction (cat) 61:153; Larynx, asphyxia (rabbit) 70:327; Phrenic, hypoglossal, mylohyoid activity, lung volume change (cat) 73:97

Inspiratory: Recruitment phrenic, laryngeal motoneurons (cat) 51:341; Intercostal nerve stimulation, baroreceptors (cat) 52:387; Hypoglossal, phrenic responses, pulmonary, superior laryngeal stimuli (cat) 56:339; Phrenic, eupnea, apneusis (cat) 60:347; Early, late onset phrenic motoneurons (cat) 61:69; Pontomedullary junction (cat) 61:153; Trigeminal, hypoglossal, phrenic activity (cat) 62:61; Respiratory reset, bulbo-spinal neurons (cat) 65:155; Larynx, asphyxia (rabbit) 70:327; Phrenic, hypoglossal, mylohyoid activity, lung volume change (cat) 73:97

Neuropeptide Y

Excites carotid chemoreceptors (cat) 67:357

Neurotransmitters, *see also* Autonomic nervous system, Biogenic amines, Catecholamines, Receptors, pharmacological

General: Monoamines, hypoxia acclimation (rat) 54:79; GABA, endogenous opiates, breathing depression (cat) 54:211; Vagus myelinated, nonmyelinated motor stimulation, airway tone, pharmacology (cat, rabbit) 74:265

Dopamine: Mechanisms carotid body, respiratory output (dog) 53:71; Drugs affecting transmission (cat) 53:239; Carotid body, CNS metabolism, hypoxic, hypobaric rat 54:79; Ventilation (goat) 54:353; Agonists, ventilation (mouse) 61:335; Antagonist, po-

tentiated responses, carotid body (goat) 65:169; Block, carotid body, hypoxia acclimation (goat) 69:245; Antagonists, central ventilatory response hypoxia (cat) 71:11

Norepinephrine: CNS metabolism, hypoxic, hypobaric rat 54:79; Presynaptic α_2 receptors, smooth muscle 70:25; Antagonists, central ventilatory response hypoxia (cat) 71:11; Dynamics, prolonged hypoxia, artery structure (dog) 74:211

Serotonin (5HT): CNS metabolism, hypoxic, hypobaric rat 54:79; Depletion, acclimation hypoxia (rat) 69:227; Antagonist, ventilation sustained hypoxia (human) 75:173

Newborn, *see also* Life stage

General: Naloxone, control of breathing (pig) 51:119; Cell, capillary, Mb increase, heart, high altitude (rat) 59:347; Hypoxia, ventilation, chemodenervated lamb 60:109; Hyperoxia, ventilation, metabolism (mouse) 63:267; Laryngeal-induced apnea, graded anesthesia (pig) 66:235; Ventilatory response hypoxia, awake, intact pig 71:307; O_2 consumption, blood affinity, pouch young (marsupial) 72:219; Metabolic rate, hypoxia, ventilation (kit) 73:55; Expiratory airflow patterns, gas exchange, model (human) 75:19; Nose occluded, sedation effects, oral breathing, asphyxia (lamb) 75:89

Mechanics of breathing: Surfactant, pre-term newborn rabbit 61:265; Stress relaxation lung (rat) 67:295; Surfactant, pressure-volume, alveolar macrophages (monkey) 73:289; Surfactant development (marsupial, rat) 75:1

Neurobiology: Airway stretch receptors (dog) 52:361; Hypoxia, hypercapnia, tracheal stretch receptors (dog) 53:325; Brainstem nuclei, biogenic amines (rabbit) 58:313; Pons, hypoxic depression breathing (rabbit) 71:25

Nicotine, *see* Smoking

Nitric oxide

Membrane diffusing capacity (human) 70:113

Nitrogen

Surfactant surface tension 58:1

Nomogram

Blood-gas, 18 d chick embryo 71:315

Noradrenaline, *see* Autonomic nervous system, Neurotransmitters

Nose, *see* Airways

Nucleotide phosphates

RBC, acclimation temperature (carp) 54:145

Nucleotides

Hyperventilation, surfactant release (rat) 52:69

Occlusion pressure, *see also* Airways

Incremental load exercise (human) 51:391; Bronchospasm (human) 56:195; Exercise, trained child swimmers 65:351; Sudden cold water immersion (human) 70:121; Respired air volume acceleration (human) 71:117

Oncotic pressure

Plasma-lymph barrier (sheep) 68:239

Ontogeny

Metabolism, mass coefficient 55:1; Ventilation, homeothermy, altricial nestling (lovebird) 65:197

Opiates, Opioids

Endogenous, breathing inhibition (cat), 54:211; Endogenous, hypercapnia, hypoxia (human) 61:85; Reversal cardiorespiratory effects (dog) 67:101; Opiate antagonist, hypercapnia, activity phrenic, airway dilator nerves (cat) 74:299

Organs

Oxygenation, varied blood O_2-carrying properties 72:211

Oronasal breathing, *see* Breathing route

Oscillations

Cardiogenic, expired gas (human) 52:191; Arterial pH medulla (cat) 55:193; Pa_{O_2}, phrenic nerve (cat) 61:301; HF, phrenic nerve, medulla section (rabbit) 64:277;

Natural Pa_{CO_2} oscillations, carotid chemoreceptor discharge (cat) 74:49

Ouabain

Contractility, cooled, warmed airway smooth muscle (guinea pig) 53:225

Oxygen, *see also* Alveolar gas, Blood gases, Gas exchange, Hyperoxia, Hypoxia, Ventilatory response

Supply, breathing movements, lamb fetus 55:23; Demand, passerine birds 55:291; Surfactant surface tension 58:1; Kinetics uptake, release, unstirred layer (goat, sheep, human) 59:71; Conformer, intertidal *Sipunculus* 59:361; Diffusion, transport (moth larva) 60:121; P_{O_2} distribution, cylinder models 64:241

Oxygen affinity of blood

Embryo: O_2 equilibrium curve (chick) 52:13; 4 Hb's (pig) 69:347

Birds: Domestic vs wild hen 52:27

Mammals: Rat blood transfused to guinea pig 51:21; Everest summit without supplementary O_2 52:265; Bohr coefficient, O_2 delivery 54:161; Diving mammals 54:269; HbO_2 binding (rhino, tapir) 56:1; Muskrat 57:15; High, induced (rat) 58:335; Increased, ery-

tropoietin (rat) 60:1; High altitude natives 61:197; Pangolin 64:103; Pig 64:113; Cyanate-increased, response hypoxia (rat) 66:225; Muscle capillarity (rat) 72:83; Pouch young (marsupial) 72:219, 73:69; Bohr effect, human RBC, Hb solutions 73:363

Water breathers: Acclimation temperature, O_2 transport (carp) 52:165; Exercise (blue crab) 58:359; Hypoxia, acute hypoxia (trout) 61:221, 74:91,99; O_2 extraction, ventilatory requirement (fish) 70:221

Oxygen capacity of blood

Induced Root effect, eel blood 51:275; No Root effect (frog) 61:125

Oxygen combining curve

Acclimation temperature, O_2 transport (carp) 52:165

Oxygen consumption, uptake

Avian embryo: Regional, chick gastrula 51:153; Diffusive, convective gas transport (chick) 52:137; Varying egg conductance (parrot) 55:277; Egg shell pore number (161 spp) 61:1; Hyperoxia, late incubation (chick) 62:217; Chorioallantois, age (chick) 68:377

Birds: DNP (duck) 57:1; Spinal cord heated (pigeon) 57:89; Cold duck 57:103; Altricial nestling (lovebird) 65:197; Penguin 71:387

Mammals: Myoglobin function, hypoxic exercising muscle (dog) 53:1; Life pattern 53:135; Maximal, and D_L, 2 measurement methods (canids) 54:173; Mouse size 60:83; Muscle blood flow, exercise (dog) 61:317; Guinea pig normal respiratory variables 61:347; Acceleration (human) 62:141; Hyperoxic newborn mouse 63:267; O_2 diffusion, myoglobin, hypoxic rat heart 63:275; Cost of breathing, cystic fibrosis 65:257; Heat stressed camel 70:97; β-adrenergic effect, high altitude acclimation (human) 70:195; Maternal, litter size (rat) 72:187; Pouch young (marsupial) 72:219; Decrease effect, hypoxic newborn kit 73:55; Heart transplant (human) 74:355; Exercise, untrained children 75:225

Maximal, *see also* Exercise: Exercise, cold (deer mouse) 55:367; "Athletic" vs "normal" mammals, adaptive variation respiratory system design (dog, pony; calf, goat) 69:1–127; Heart, chronic bradycardial pacing (rabbit) 72:1

Water, dual breathers: Lugworm 57:349; Different P_{O_2}, intertidal *Sipunculus* 59:361; Gill vs skin (eel) 66:341; Skin, hypoxic cold submerged bullfrog 70:85; Graded acute hypoxia (trout) 71:69; Adaptation air breathing, intertidal rockpool teleost (*Blennius*) 71:355; RBC, adrenergic pH regulation (salmon) 74:65

Oxygen debt

O_2 deficit - O_2 debt, exercise (pony) 70:251

Oxygen dissociation curve

Bird: RBC phosphates, Bohr effect (house sparrow) 59:93

Mammal: High altitude (alpaca, llama, taruca) 52:303; 4 Hb's, (sheep) 53:31; Bohr coefficient, O_2 delivery 54:161; Low temperature sensitivity (pig) 64:113; Aging RBC 68:215; Nonlinearity, diffusing capacity estimate (human) 73:279

Poikilotherm: Winter submerged, summer turtle 53:15

Oxygen equilibrium curve

Chick embryo 52:13; Domestic vs wild hen 52:27; Winter submerged, summer turtle 53:15; Intra-, extrapulmonary shunt (duck) 63:151; DPG binding RBC 68:227; O_2 extraction, ventilatory requirement (fish) 70:221; Change, organ oxygenation 72:211

Oxygen extraction

Cold duck 57:103; Penguin 71:387; Fetal llama 75:327

Oxygen transfer, RBC

Rate O_2 release HbO_2, capillary P_{O_2} 63:79; Conductance 67:209; Kinetics uptake, release 72:65; Kinetics, temperature (turtle) 75:371

Oxygen transport, *see* Gas transport

Oxygen uptake

Everest summit without supplementary O_2 (human) 52:265; Pattern throughout life 53:135

$P_{0.1}$, *see* Airways, Occlusion pressure

P_{50}, *see* Oxygen affinity of blood

Panting

Bird: Arterial P_{O_2} (emu) 54:189; Spinal cord heated (pigeon) 57:89; Tracheal coiling, 4 spp. crane 62:95; Heat-stressed penguin 71:387; Lung IPC, mechanoreceptor discharge (pigeon) 75:267

Mammal: Inspiratory muscle activity (rabbit) 51:259; Airflow regulation (dog) 61:185; Heat stressed camel 70:97

Parabronchial lung, *see* Bird respiration

Passive motion, *see* Exercise

Perfusion

And diffusion, alveolar gas exchange 51:287; Tidally ventilated, non-steadily perfused lung model 60:295; Brain, gravity-induced hyperventilation 69:237; Egg shell air cell, rest of egg (chick) 71:45

Perinatal
CO_2 response burrowers (mice, rat) 57:341; Rate surfactant secretion (rat) 68:269; O_2 transport, affinity, Hb, carbonic anhydrase activity, developing marsupial 73:69; Surfactant, alveolar macrophages (monkey) 73:289;
pH, *see* Acid-base status
Phagocytosis
Aerosol particles, duck lung 67:23
Pharmacological agents and hormones
Acetazolamide 56:269, 61:327, 69:257, 72:315, 74:373; Acetylcholine 73:1; Adenosine 71:33; Adrenaline 74:65; Alcohol 75:89; Alloxan 64:125; Almitrine 61:95, 65:379, 74:139,275; Amiloride 58:101, 60:157, 67:323; Aminophylline 72:163; Amyl nitrite 62:169,181; Apomorphine 53:71, 71:11; Aspirin 53:225; Atenolol 74:229; Atropine 56:261, 69:335, 70:265, 74:129,265; Benzolamide 56:269; Bicuculline 54:211; Bradykinin 58:187, 63:383; Capsaicin 58:187, 60:377, 63:383, 73:21, 75:279; Carbachol 52:245, 57:269, 58:223, 66:157, 69:277, 71:157; Catecholamines 53:161; Clonidine 71:11; Cyanate 66:225, 72:83; Cyanide 54:353, 62:61, 63:161, 69:335; Diazepam 75:89; Diethylpyrocarbonate (DEPC) 64:161; 2,4-Dinitrophenol 57:1; DIDS 57:365; Na^+ Dithionite 55:63; Domperidone 65:169, 69:245; Dopamine 53:71, 54:353; Doxapram 54:353, 62:61, 66:387; Endotoxin 53:295, Estradiol 52:259, 61:383; Ether 65:85; Furosemide 56:301; GABA 64:351; Glutamate 66:27; Haloperidol 53:71, 71:11, 72:361; Halothane 62:61; Heparin 69:277; Hexamethonium 60:169, 66:303, 74:265, 75:279; Histamine 52:245, 56:195, 57:269, 58:223, 61:31, 63:339, 66:157, 69:277, 71:1,157, 73:155; HRP 51:241, Indomethacin 69:149, 75:39; Ionophore 23187 (Ca^{2+}) 71:157; Isoproterenol 57:61, 63:375, 64:203, 66:157; Kainic acid 58:323, 61:153; Methacholine 58:223, 62:47, 63:339; Methazolamide 56:269; Methoxyverapamil (D600) 74:15; Methylcholine 56:195, 57:31; Methyl-isobutylxanthine 71:33 α-Methyltyrosine 54:211; Methylxanthines 53:239; Methysergide, 54:211, 75:173; Minoxidil 75:11; Morphine 62:79, 64:289; Naloxone 51:119, 54:211, 55:325, 74:299; Neostigmine 62:15; Nicotine 57:153, 63:161,361, 64:351; Nifedipine 68:11,41; Nitrobenzylthioinosine 71:33; Ouabain 53:225, 57:269, 60:157; Parachlorophenylalanine (PCPA) 69:227; Pargyline 58:313; Pentobarbital 62:61, 64:307, 65:85; Pentobarbitone 75:89; Phenyldiguanide (PDG) 60:377, 67:379 71:1; Phenoxybenzamine 56:261, 71:11; Progesterone 52:259, 61:383; Propranolol 63:375, 64:203, 70:195, 71:11, 74:129,229,265; Prostaglandin $F_{2\alpha}$ 52:245; Protryptiline 62:61; Salbutamol 62:15; Salicylate 51:219; Serotonin 52:245; SO_2 62:195,203, 71:1; Strych4-nine 62:61; ^{99m}Tc-DTPA 72:375; Tetrodotoxin 67:323; TMB-8 68:41; Tris 51:109; Theophylline 57:331; Verapamil 66:259, 71:157, 75:173; Yohimbine 70:25; Zymosan 53:295
Phosphates, organic
Ambient O_2, RBC chick embryo 51:141; Winter submerged, summer turtle 53:15; Bohr effects, RBC (house sparrow) 59:93
Phrenic nerve, *see also* Diaphragm, Muscle, respiratory, Neurons, motor
General: Abrupt hypercapnia, hypoxia (cat) 56:237; Nicotine (cat) 57:153; Stimulus, diaphragm strength human 58:263, dog 63:187; Activity, eupnea, apneusis (cat) 60:347; Capsaicin-induced reflexes (cat) 60:377; Early, late onset activity (cat) 61:69; Pa_{O_2} oscillations (cat) 61:301; Morphine, intercostal-to-phrenic reflex (cat) 62:79; Lung inflation (cat) 62:153; CO_2 narcosis (cat) 70:173; Opiate antagonist, hypercapnia (cat) 74:299
Afferents in phrenic: To lateral medullary reticular area (cat) 59:155; Inhibitory, excitatory ventilatory effects (cat) 69:321
Neurobiology: Pneumotaxic center activity, intercostal, abdominal muscle afferent stimulation (cat) 52:85; Changes upper airway pressure (cat) 55:341,355; Pulmonary, superior laryngeal input (cat) 56:339; Split brainstem (rabbit) 57:293; Carotid glomectomy, hypoxia (cat) 57:331; Medullary areas, foci (cat) 58:51,323, 69:335, (rat) 74:35; And hypoglossal, trigeminal activity (cat) 62:61; Natural HFO, split medulla (rabbit) 64:277; And hypoglossal activity, morphine (cat) 64:289; Anesthesia vs decerebration (dog) 65:267; Reticular formation (cat) 66:27; Lung stretch receptor, hypercapnia (dog) 68:319; Stimulation, diaphragm fatigue (rabbit) 69:307; Respiratory-related activity, decerebrate cat 73:175,189
Phylogeny
Metabolism, mass coefficient 55:1
Plasma
Lung plasma-lymph barrier, dextran (sheep) 68:239; Hypoxic pressor response, plasma, blood perfused heart (rat, cat, pig) 72:109

Plethysmography
Extrathoracic airways, lung volume (human) 52:217; Apparatus, breathing pattern (human) 61:255

Pleura
Pleural liquid: Intrapleural, spread kinetics (dog) 65:13
Pleural liquid pressure: At moving lung border (dog) 75:105,117; Apposition, lung zones (dog) 75:357
Pleural surface pressure: At moving lung border (dog) 75:105,117
Transpleural: CO_2 diffusion, excised dog lung 52:205; Gas loss, excised lung (guinea pig) 63:129

Pneumotaxic center
Medulla neuron activity, apneusis (cat) 51:361; Intercostal proprioceptor stimulation (cat) 52:85; Phrenic activity, apneusis (cat) 60:347

Poikilotherms, *see* Amphibian respiration, Invertebrates, Reptile respiration, Water breathers

Polycythemia
Intermittent hypoxia (rat) 56:253; Chronic mountain sickness (2 rat strains) 58:161,171, 62:85

Pons, *see also* Neurons, central, CNS
Split (rabbit) 57:293; Pontomedullary junction (cat) 61:153; Hypoxic depression breathing newborn (rabbit) 71:25

Postnatal, *see also* Life stage, Perinatal
Fetal-adult Hb change (pangolin) 64:103; Development denervated lung (rat, rabbit) 67:137; Lung development (human) 67:247,269; Tb, hypoxia, ventilation (kit) 68:359; O_2 consumption, blood affinity, pouch young (marsupial) 72:219; O_2 transport, affinity, Hb, carbonic anhydrase activity, developing marsupial 73:69

Posture
Abdominal muscles (human) 53:341; Gas trapping rat lung 55:309; Regional pulmonary function (human) 56:145,169; Diaphragm strength (human) 58:263; Intercostal EMG, sleep (cat) 56:385; Ventilation, hypoxia, hypercapnia (human) 58:87; Head position, diaphragm, upper airway muscle activity (cat) 60:181, abdominal muscle (dog) 70:159; V_T, f_R, cardiac output (human) 66:123; Expiratory muscle 67:311, afferent origin (dog) 70:359, (human) 74:151; Gravity, ventilatory response CO_2 (human) 71:247

Potassium
Ventilatory adaptation K^+-depleted rat 57:23; Exercise, chemoreceptor activity (cat) 59:65; Peripheral chemodenervation, ventilatory response K^+, CO_2-loaded cat 60:217; High K^+, tracheal muscle relaxation, Ca^{2+} channel activation (guinea pig) 61:43; Infusion, ventilation, hyperoxia, hypoxia (cat) 72:59; Interaction with hypoxia, carotid chemoreceptors (cat) 72:295; High K^+, β adrenergic blockade, carotid chemoreceptor discharge (cat) 74:229

Pouch development
Tammar wallaby: Metabolic rate, HbO_2 transport, newborn, postnatal 72:219; O_2 transport, affinity, Hb, carbonic anhydrase, development 73:69, surfactant development 75:1

Pregnancy
Late, labor, fetal lamb f_R drop 65:55

Pressure breathing
Negative: SO_2 inhaled, larynx denervated, reflex effects (rabbit) 62:203; Upper airways, breathing pattern (dog) 65:315
Positive: End-expiratory, lung fluid (sheep) 64:125; Anesthesia (human) 65:303; End-expiratory, bronchial blood flow, occluded pulmonary artery (dog) 66:269; Larynx afferent activity (rabbit) 69:195

Pressure-flow relation
Hypoxic rat 56:91; Acute pulmonary hypertension (dog) 60:169; Zones II, III (dog) 61:115

Pressure-volume relation, lung
Elasticity (child) 52:229; Growing guinea pig 56:217; Alveolar liquid pressure (rabbit) 57:61; Sequential open, close (rat) 61:277; Cycles, air-, liquid-filled intact lung (rabbit) 63:19; Age, human adult 65:1; 5 analysis methods, smoke, elastase (rat) 66:147; Air opening pressure (rat) 68:279; Infant, child 68:311; Vagal blockade (human) 70:265

Proprioceptors, *see* Neurons, afferent, sensory

Prostaglandins, prostanoids, *see also* Thromboxane
Lung lymph dynamics, HFV (sheep) 61:31; Indomethacin, lung edema, gas exchange (dog) 69:149; Hypoxia, prostaglandin E_2, rat, pig renal cell lines 70:131; Hypoxic pulmonary vasoconstriction, prostanoid production inhibited (dog) 75:39

Psychophysics
Resistive load detection 51:131

Puberty, *see also* Life stage
Stature, lung volumes (human) 65:139; Pre-, peripubertal, ventilatory pattern, exercise, trained swimmers 65:351
Pulmonary blood flow, *see* Blood flow
Pulmonary circulation
Hypoxic vasoconstriction: Reduced, zymosan (dog) 53:295; Chronic, acute hypoxia (rat) 56:91; Arterial, hypoxia, glucose depletion (rabbit) 63:177
Mechanics, lung surface tension 56:21; Hypertension, high altitude (2 rat strains) 58:161,171; Pressure-flow, zones II, III (dog) 61:115; Lung blood flow response time hyperoxia (fetal lamb) 63:43; Arterial pressure, acute, chronic hypoxia (2 rat strains) 64:81; Arteries, no CO_2 receptors (cat) 73:211
Pulmonary gas exchange, *see* Gas exchange
Pulmonary receptors, *see* Neurons, afferent, sensory
Pulmonary reflexes, *see* Reflexes

Reaction kinetics, *see* Kinetics
Rebreathing
Ventilatory response CO_2, exercise, women swimmers 53:263; Peripheral chemodenervated, acidotic goat 56:51; Diaphragm (rabbit) 56:105; Measure, mixed venous P_{CO_2}, exercise (human) 59:379; Transient A-a O_2, CO_2 differences (dog) 60:135; Small resistive load (human) 61:369; Lung volume, inert gas mixing defect (human) 66:355
Receptors, *see* Neurons, afferent, sensory
Receptors, pharmacological, *see also* Neurotransmitters
β-adrenergic receptors, no function goat carotid body 64:203; presynaptic α_2 receptors, norepinephrine, dog tracheal muscle 70:25; Direct Ca^{2+} ionophore-induced bronchial muscle contraction 71:157; Tracheal muscle (monkey) 71:375; Dopamine D_2 receptor block carotid chemoreceptors (cat) 72:361; Ca^{2+} antagonist role, responses to spasmogens, antigen (human) 74:15
Recurrent laryngeal nerve
Pulmonary, superior laryngeal inputs (cat) 56:339; Capsaicin-induced reflexes (cat) 60:377; Response, lung inflation (cat) 62:153; Block, effect stretch receptors, tracheal muscle (dog) 71:343; Opiate antagonist, hypercapnia (cat) 74:299

Red blood cell (RBC)
Bird, organic phosphates: Ambient O_2 (chick embryo) 51:141; Bohr effects (house sparrow) 59:93
Mammal: Rat blood transfusion to guinea pig 51:21; O_2 uptake, release kinetics (goat, sheep, human) 59:71, rate O_2 release, capillary P_{O_2} 63:79, transfer conductance (human) 67:209, 72:65, aging RBC 68:215; Mass, high altitude (2 rat strains) 62:85; O_2 equilibrium curves, DPG binding 68:227; Volume, reticulocytes, altitude-susceptible rat 70:229; Deformability, hypoxic pressor response (rat, hamster) 72:95, plasma, blood perfused lung (pig, cat, rat) 72:109
Poikilotherm: O_2 transfer kinetics, temperature (turtle) 75:371
Water breathers: Acid-base status, nucleoside phosphates, temperature acclimation (carp) 54:145; H^+, Cl^- equilibrium across membrane (carp) 60:209; pH, acute hypoxia (trout) 71:69; Adrenergic intracellular pH regulation (salmon) 74:65; Acute hypoxia (trout) 74:91,99
Reptile respiration
Acid-base status, turtle: Winter, summer 53:15; Cold, submerged, anoxic 53:187; Anoxic, anoxic-hypercapnic 71:213
Blood respiratory properties, turtle: Winter, summer 53:15; Temperature, CO_2 dissociation curve 63:53
Gas exchange, transport: Winter, summer turtle 53:15; Venous admixture (turtle) 53:99; Ventilation-perfusion distribution (lizard) 60:277; Intracardiac shunt (lizard) 71:83; RBC O_2 transfer kinetics (turtle) 75:371
Lung: Volume, hypoxic garter snake 53:63; Surfactant quantity, composition (lizard) 75:335
Mechanics of breathing: Ventilatory cycle control (garter snake) 64:13
Neurons: Bulbar respiratory, postsynaptic potentials, firing patterns (turtle) 64:149; Arterial chemoreceptors, baroreceptors, localization, innervation (tortoise) 65:295; Temperature, CO_2-sensitive lung chemoreceptors (lizard) 72:327; Lung IPC, stretch receptors (alligator) 74:285; Prolonged inflation, lung stretch receptor response, hypercapnia (turtle) 75:75
Ventilation, breathing pattern: Central control (garter snake) 64:13; Body temperature (lizard) 65:29; Hyperthermia, hypercapnia (turtle) 67:37; Anoxic, anoxic-hypercapnic turtle 71:213

Reptiles
Chelonians: tortoise *Testudo hermanni* 65:295; turtle *Chrysemys picta* 53:15, 67:37, 75:75; *C. picta bellii* 53:187, 71:213; *C. scripta* 53:99, 75:75; *Pseudemys scripta* 63:53, 64:149; *P. scripta elegans* 75:371
Crocodilian: Alligator *Alligator mississippiensis* 74:285
Lizard: *Varanus salvator* 60:253; tegu *Tupinambis nigropunctatus* 60:277, 72:327; *Gallotia galloti* 65:29; *Varanus niloticus* 71:83; *Ctenophorus nuchalis* 75:335
Snake: garter *Thamnophis sirtalis* 53:63, 64:13, 74:311

Resistance
Airway, lung: Load detection 51:131; Upper, muscles, augmented breath (dog) 53:87; Acutely hypoxic sheep 53:161; Lung sounds, small-airway disease, smokers 53:203; Reduction, hypoxia, zymosan (dog) 53:295; Cold air (cat) 54:41; Chronic mountain sickness 2 rat strains 58:161,171; Stimulation group III, IV muscle afferents (dog) 59:185; Quick release technique (human) 60:329; Mucus, effect methacholine (dog) 62:47; Lung inflation, motoneuron response (cat) 62:153; CN^-, nicotine (dog) 63:161; Histamine, methacholine (basenji, greyhound) 63:339; Cold-induced bronchospasm (rabbit) 63:347; Impedance measurement 68:145; Upper, partitioning, 2 breeds calf 69:299; Interrupter method measure 70:301; SO_2, cold-induced bronchospasm (rabbit) 71:1; Inspiratory, bronchomotor tone, vagotomy (newborn dog) 72:271; Ventilatory system, infant, child 73:201; Transient added resistance, volume, pressure (human) 74:239
Vascular: Acute pulmonary hypertension (dog) 60:169

Respiratory centers
General: Splanchnic nerve stimulation (cat) 51:229; Recruitment inspiratory motoneurons (cat) 51:341; Abdominal, chest wall afferents, pneumotaxic center (cat) 52:85; Dopaminergic modulation, timing (dog) 53:71; Split brainstem, vagotomy (rabbit) 57:293; Phrenic afferent input lateral medulla reticular formation (cat) 59:155; Phase relation, Pa_{O_2} and phrenic oscillations (cat) 61:301; Non-REM sleep, respiratory drive (human) 63:241; Perfusion, gravity-induced hyperventilation 69:237
Respiratory neuron activity: Medullary, eupnea, apneusis (cat) 51:361; Split brain, hypercapnia, (cat) 57:225; Inspiratory loading, inspiratory neuron activity, (vagotomized cat) 60:193; Inspiration, reflex partition inputs airway stretch receptors (rabbit) 60:311
Water breathers: Mesencephalon (carp) 51:241

Respiratory characteristics of blood, *see* Blood gases

Respiratory frequency, *see also* Breathing pattern, Oscillations
Forced oscillations, mechanics (monkey) 55:47; Microwave measure (mouse) 56:73; Heat load, ambient temperature (mouse, hamster) 56:81; K^+-depleted rat 57:23; High, assisted ventilation 57:135; High, surfactant (rabbit) 58:29; Mouse size 60:83; Dead space dependence, HFV (dog) 63:213; Influence cardiac output (human) 66:123; Tracheal tone, hyperoxic dog 69:161; Efficiency gas exchange, HFO (monkey) 73:125; Cigarette smoke, isolated larynx (dog) 73:301; Biochemical characteristics diaphragm, 8 mammals 74:115

Respiratory quotient
Skin respiration (bullfrog) 55:379; Reliability RQ measurements 60:387

Respiratory system design
Mammals, adaptive variation, energetic demand (dog, pony; calf, goat) 69:1–127

Resuscitation
Newborn rat 51:1

Rockpools, *see* Intertidal

Root effect
CO_2, fixed acid, eel blood 51:275; None (*Xenopus*) 61:125

Scaling, *see* Allometric relations

Sciatic nerve
Stimulation, diaphragm, upper airway muscle response (dog) 58:65

Season
O_2 affinity, lactate (prawn) 57:189

Sensitization
Na^+, Ca^{2+} influx trachea smooth muscle cells (guinea pig) 60:157, 67:323; Ultrastructure trachea muscle, nerves (guinea pig) 72:283; In vivo, in vitro tracheal response cold (rabbit) 73:1; Ca^{2+} antagonist role, responses to spasmogens, antigen (human) 74:15; Antigen challenge, noncholinergic nonadrenergic tracheal inhibition (guinea pig) 74:129

Serotonin (5-HT), *see* Neurotransmitters

Servocontrol
Ventilator simulation, control of breathing (dog) 58:345; Servo-respirator 73:87

Sex
F: Progesterone-induced hyperventilation, estrogen (virgin guinea pig) 52:259; Ventilatory response CO_2 (swimmers) 53:263; Hypoxia response menstruation 56:229
M: Castration, effects progesterone, estrogen (guinea pig) 61:383
Shivering
Motor effects, amyl nitrite inhalation (rabbit, cat) 62:181
Shunt
Anatomical (turtle) 53:99; Gas exchange (lizard) 60:277; Dead space (duck) 63:139; Intra-, extrapulmonary (duck) 63:151
Sigh
Hyperoxic, expiratory muscle inhibition (cat) 72:303
Skeletal muscle, *see* Muscle
Skin, *see* Integument
Sleep
Nose occluded ventilatory drive (human) 51:209; Slow-wave, elastic loading, ventilation (human) 55:103; CO_2, naloxone, fetal breathing movements (lamb) 55:325; Intercostal muscles, posture (cat) 56:385; Diaphragm, larynx muscle activity (dog pup) 60:95; HFV, apnea, spontaneous breathing (dog) 60:357; Larynx stimulation (lamb) 63:31; Non-REM, respiratory drive (human) 63:241; Larynx muscle activity (dog) 66:315,327; Hyperoxic hypercapnia, diaphragm, upper airway dilators (cat) 70:183; Breuer-Hering inflation reflex (human) 73:145; REM, SWS, CO_2 or dead space load, ventilation (human) 75:183
Smoking
Lung sounds, small airway disease 53:203; Deposition inhaled aerosol 56:327; Passive, pressure-volume relation (rat) 66:147; Nicotine receptor antagonist (dog) 66:303; Reflex reduction f_R, isolated larynx (dog) 73:301; Mother, diffusion capacity newborn (rat) 75:129
Smooth muscle, *see* Muscle
Solitary tract
Destruction, phrenic activity 58:323; Respiration-related neuron discharge (cat) 64:135
Specific ventilation
Extracellular pH (crayfish) 65:235
Spinal cord, spinalectomy
Intact: Heated (pigeon) 57:89; Stimulation, EMG latencies intercostal, truncal muscles (human) 73:325
Severed: Split (rabbit) 57:293; Dorsal rhizotomy, medulla inspiratory activity (cat) 60:193; Transected, salicylate, phrenic nerve 51:219; C1 transection, intercostal-to-phrenic reflex, morphine (cat) 62:79; Thoracolumbar transection, motor effect amyl nitrite inhalation (rabbit, cat) 62:181
Splanchnic nerve
Stimulation, cat: Bulbo-spinal respiratory effects 51:229; Increase respiration 58:187
Splenectomy
Brain blood flow, exercise (pony) 68:77
Split brainstem
Respiratory neurogenesis, hypercapnia (cat) 57:225, vagotomy (rabbit) 57:293; Medulla, natural HF oscillations phrenic neurogram (rabbit) 64:277
Starvation
Lung structure, hibernating bat 59:301
Static pressure
Maximal, growing children 51:45, trained female swimmers 64:229; And hypercapnia, phrenic, lung stretch receptor response (dog) 68:319
Stratification, *see* Distribution, Inhomogeneity
Stretch receptors, *see* Neurons, afferent, sensory
Submergence
O_2 transport, winter turtle 53:15; Acid base status, cold turtle 53:187
Subthalamic locomotor region
Cardiorespiratory responses (cat) 64:93; Region or muscle stimulation (cat) 64:317; Lesions, muscle contraction (cat) 66:215
Sudden infant death syndrome
Naloxone effects, breathing control (piglet) 51:119
Superior laryngeal nerve, *see also* Larynx, Neurons, afferent, sensory
Role, cold air (cat) 54:41; Upper airway negative pressure (rabbit) 54:259; Laryngeal receptors (dog) 54:317; Afferents, changes airway pressure (cat) 55:341,355; Hypoglossal, phrenic response (cat) 56:339;; Occlusion, afferent activity (dog) 58:41; SO_2 block receptors (rabbit) 62:195; Mechanoreceptors, effect cold air (dog) 64:45; Cold-sensitive unit activity (cat) 67:379; Afferent activity, epiglottal source (rabbit) 69:195; Section, breathing pattern (rat) 70:51
Surface area, respiratory
Lungs fixed in zones II, III conditions (rabbit) 52:41
Surface tension, *see also* Surfactant
Lung, pulmonary vessel mechanics 56:21; Alveolar, temperature effects (rabbit) 62:31
Surfactant
Adult: 4, properties 51:79; Isolated lung, perfused (rat) 52:69; Rabbit 57:61; Gas mixing

effects on (dog) 58:1; Phospholipid metabolism (rabbit) 58:15,29; Air opening pressure (rat) 68:279,293; Quantity, composition, faveolar, alveolar lung (lizard, rat, mice) 75:335
Fetus: Rabbit 51:195; Synthesis (lamb) 57:213; Pre-term (rabbit) 61:265; Perinatal rate secretion (rat) 68:269; Air opening pressure (rat) 68:293; Pressure-volume, alveolar macrophages (newborn monkey) 73:289
Newborn: Development (marsupial, rat) 75:1
Tadpole: Bullfrog 59:231

Swimbladder, *see* Gas bladder

Swimming
Ventilatory response CO_2, exercise, trained women swimmers 53:263; Maximal static pressure, lung volume, young females 64:229; Exercise ventilatory pattern, peripubertal trained swimmers 65:351; f_H, underwater breath-hold or snorkel (human) 69:387

Symmorphosis
"Athletic" vs "normal" animals (dog, pony; calf, goat) 69:1–127

Tachypnea
Discharge inspiratory muscles (rabbit) 51:259

Tadpole, *see also* Life stage
Lung compliance, development (bullfrog) 59:231; Gill, lung ventilatory regulation, preparation for metamorphosis (bullfrog) 66:279

Taylor laminar dispersion
Human airways 59:131; Longitudinal gas mixing (beagle) 71:269

Techniques, *see* Methods and techniques

Temperature (T) effects, *see also* Acid-base status, Panting, Thermoregulation
Airways: Quick cooling, warming, contractility muscle (guinea pig) 53:225; Bronchial blood flow (dog) 68:259; Nose, temperature-sensitive "flow" receptors (rat) 75:51
Ambient or body T change: Exercise, ventilation, normocapnic hen 54:109; Ventilation, chemoreceptor control, ventilatory movements (cockerel) 54:223,233; Maximal O_2 consumption, cold, exercise (deer mouse) 55:367; f_R, heat load, ambient T level (mouse, hamster) 56:81; Tb, diaphragm activity (rabbit) 56:105; Ventilatory, circulatory changes, gas exchange (duck) 57:103; Acid-base status, heterothermic ground squirrel 57:307; Cold guinea pig 61:357; Recovery from cold (cat) 64:329; Mild cold, altricial nestling (lovebird) 65:197; Vagotomy, cardiorespiratory responses (pigeon) 66:293; Exercise dry warm air (human) 67:115; Maturation, response hypoxia (kit) 68:359; Cold water, respiratory drive (human) 70:121; Adenosine (rat) 72:47; Drop, hypoxic newborn kit 73:55; Maternal, fetal lung growth (rat) 75:309
Blood respiratory properties: Cold duck 57:103; H_2CO_3 pK (trout) 61:237; Low T, maternal-fetal O_2 transfer (pangolin) 64:103; Modest effect, O_2 dissociation (pig) 64:113; RBC O_2 transfer conductance (human) 67:209
Cooling: Medulla ventral surface, intermediate areas, foci, phrenic output (cat) 58:51, 60:377, hypoxia, tracheal tone (cat) 69:335, respiratory, vasomotor responses (rat) 74:35; Bronchospasm (rabbit) 63:347; Vagus, lung C-fiber, stretch receptors (dog) 64:29, effect different lung afferents (dog) 72:19, entrainment breathing rhythm, lung inflation (rabbit) 75:157; Larynx, neuron activity (dog) 64:45, (cat) 67:379, airway dilators (dog) 66:61; Tracheal stretch receptor activity (dog) 66:205; In vivo, in vitro response trachea (sensitized rabbit) 73:1
Mechanics of breathing: Surfactant release (rat) 52:69; Breathing cold air (cat) 54:41; Airways contraction (human) 57:269; Alveolar surface tension (rabbit) 62:31; Immersion, lung volumes (human) 75:255
Poikilotherms: Acclimation temperature, O_2 transport 52:165, RBC acid-base (carp) 54:145; Blood respiratory properties, summer, submerged winter turtle 53:15, submerged, cold, anoxic turtle 53:187; CO_2 dissociation curve (turtle) 63:53, hemocyanin Bohr effect (2 hydrothermal vent crustaceans) 71:57, kinetics O_2 transfer, RBC (turtle) 75:371; Ambient, body T change, Ventilation, breathing pattern (lizard) 65:29, hypercapnia (turtle) 67:37, hypoxia (toad) 69:267, CO_2-sensitive lung chemoreceptors (lizard) 72:327, lung IPC, stretch receptor, mechanoreceptor (garter snake) 74:311
Warming: Spinal cord (pigeon) 57:89

Theory, *see* Models, theory

Thermoregulation, *see also* Panting, Temperature effects
Hyperthermy, heat stress: Role nasal passages (dik-dik) 56:183; Role tracheal coiling, 4 spp. crane 62:95; Dehydrated camel 70:97; Penguin 71:387
Hypothermy, cold stress: Heat, water conservation (reindeer) 59:279

Thoracoabdominal movement, *see* Abdomen, Chest wall, Mechanics of breathing

Thromboxane
Acid, acid-base ECF infusion, blood pressure, f_R (cat) 71:169; Hypoxic pulmonary vasoconstriction, prostanoid production inhibited (dog) 75:39

Tidal volume, *see also* Breathing pattern
Change, IPC discharge (hen) 61:95; Guinea pig 61:347; Effect on lung maldistribution (human) 66:11; Cardiac output (human) 66:123; Tracheal tone, hyperoxic dog 69:161

Tissue culture
Hyperoxia, tracheal explants (hamster) 53:285; Hypoxia, prostaglandin E_2, rat, pig renal cell lines 70:131

Tissues, *see also* Gas exchange
Blood flow, rat blood into anesthetized guinea pig 51:21; Regional O_2 consumption (chick gastrula) 15:153; Respiration (icefish) 57:201; Model, inert gas washout 63:1; Lung, tissue tension decay, glycosaminoglycans 66:247; N_2-O_2 gas bubble growth decompression 71:299

Titration alkalinity
Ambient H_2O, extracellular pH (crayfish) 65:235

Torpor
Acid-base status: Submerged, cold, anoxic (turtle) 53:187; Ground squirrel 57:307

Trachea (vertebrate), *see also* Airways, Morphometry
General: Explants, hyperoxia (hamster) 53:285; Fluid flow lamb fetus 57:47; Morphometric variation (human) 59:289; Ca^{2+}, ciliary beat frequency, skinned tracheal epithelium (dog) 60:9; Coiling, heat stress, 4 spp. crane 62:95; Ultrastructure, neuromuscular control (human) 63:109; Tone, effects nicotine, GABA, medulla surface (cat) 64:351; Pressure measurement (dog) 68:121; Tone, V_T, f_R, hyperoxic dog 69:161; Tone, hypoxia, cool ventral medulla surface (cat) 69:335; In vivo, in vitro response cooling, sensitized rabbit 73:1; Capsaicin-induced relaxation, drop parasympathetic bronchoconstrictor activity (cat) 73:21; Nonadrenergic noncholinergic inhibition cyclic GMP 73:351, antigen challenge (guinea pig) 74:129
Muscle: *see* Muscle, smooth
Receptors: *see* Neurons, afferent, sensory

Tracheal system
Morphometry (Onychophoran) 60:75

Training
Rebreathing, ventilatory response CO_2, exercise, women swimmers 53:263; Ventilatory response CO_2 athletes 55:393; Soleus muscle mitochondrial volume, distribution (rat) 64:1; Static pressures, lung volume, young female swimmers 64:229; Diaphragm, plantaris mitochondrial respiration (rat) 67:225

Transfusion
Consequences, rat blood into guinea pig 51:21; High O_2 affinity Hb into rat 58:335; High O_2-affinity, erythropoietin production (rat) 60:1

Transient stimuli
O_2, N_2: sleep, high altitude, native high-, lowlanders 52:281; Slope alveolar plateau (human) 56:309; Carotid glomectomy (rat) 57:235

Transmitters, *see* Neurotransmitters

Transplantation, human
Heart, heart-lung 72:131; Heart 74:355

Transpleural gas diffusion, *see* Pleura

Transpulmonary pressure
Pulmonary stretch receptors, shift FRC (cat) 52:371; Parenchymal edema, bronchi diameter (dog) 55:223; Rabbit lung 57:61; Sequential open, close lung units (rat) 61:277

Trigeminal nerve
Afferents, motor effects changes airway pressure (cat) 55:341,355; And hypoglossal, phrenic activity (cat) 62:61; Motor output, reticular mechanisms (cat) 66:27; Nose, temperature-sensitive "flow" receptors (rat) 75:51

Twitching activity
Index of P_{O_2} variation effect (moth larva) 60:121

Ultrastructure
Neuromuscular control, trachea, bronchi (human) 63:109; Tracheal muscle, nerves, sensitized guinea pig 72:283

Vagus nerve, vagotomy, *see also* Neurons, afferent, sensory
Afferents: Nonmyelinated (rabbit) 55:63; SO_2 effects, expiratory volume time (rabbit) 56:359; Bronchoconstriction, ventilation (cat) 57:31; Lung expansion effects (dog) 57:259; Upper airway occlusion (dog) 58:41; Medulla intermediate areas cooling (cat) 58:51; Lung CO_2/H^+ receptors (rabbit) 63:227; Cooled, C-fiber, lung stretch receptors 64:29, section, effect of end-expiratory

volume 67:347, effect different lung afferents 72:19, lung hyperinflated, tracheal tension (dog) 72:35, entrainment breathing rhythm, lung inflation (rabbit) 75:157; "Alveolar" receptor (dog) 67:159; Hypercapnia, airway pressure, lung stretch receptors, IPC (alligator) 74:285; Lung stretch, mechanoreceptor, IPC (garter snake) 74:311

Efferents: Stimulation, myelinated, nonmyelinated, airway tone, pharmacology (cat, rabbit) 74:265

Reflexes: Branchial ganglia stimulation (carp) 51:241; Role, cold air breathing (cat) 54:41; Tracheal pouch relaxation (guinea pig) 56:205; Tachypnea, motor effects, amyl nitrite inhalation (rabbit) 62:169, (rabbit, cat) 62:181

Vagotomy: Salicylate stimulation respiration (cat) 51:219; Slight hypercapnia (cat) 55:81; Diaphragm activity (rabbit) 56:105; Split brainstem (rabbit) 57:293; Breathing pattern, pressure-loaded air sacs (hen) 58:197; Inspiratory loading, inspiratory medulla neuron activity (cat) 60:193; Cold-induced bronchospasm (rabbit) 63:347; Asphyxic inspiration (rabbit) 64:57; Hypercapnia, high-altitude acclimatized cat 65:365; Hyperthermia (pigeon) 66:293; Superior laryngeal nerve section (rat) 70:51; Lung, breathing pattern (rat) 70:205; Blockade, pressure-ventilation (human) 70:265; Hypoxic vasoconstriction, hypoxic carotid chemoreceptor stimulus (dog) 71:185; Intercostal inspiratory muscle, occlusion, hypercapnia (dog) 71:201; Bronchomotor tone, hypoxia, hypercapnia, newborn dog 72:271; Respiratory mechanics, pressures, control (rat) 73:43; Respiratory-related activity facial nerve, decerebrate cat 73:175,189

Valving, inspiratory

Gas density, velocity, airways (goose) 70:287; Aerodynamic considerations (bird) 72:241; Model and convective inertia (bird) 73:111

Vascularization

Chorioallantois, adenosine (chick) 71:33

Vasoactive intestinal peptide (VIP)

Tracheal pouch relaxation (guinea pig) 56:205

Vasoconstriction, hypoxic pulmonary

Reduced, zymosan, hypoxic dog 53:295; Pulmonary, hypoxic rat 56:91; Glucose depletion (rabbit) 63:177; Gas exchange (human) 68:11; Carotid chemoreceptor hypoxia stimulus, vagotomy (dog) 71:185; Almitrine, chemodenervation (dog) 74:139; Inhibited, permeability edema (dog) 75:11; Prostanoid inhibition (dog) 75:39

Vasodilatation

Diaphragm, lung C-fiber stimulation (dog) 75:279

Venous admixture

Turtle 53:99; sheep 55:205

Ventilation, *see also* Assisted ventilation, Control of breathing: central nervous, Exercise, High altitude, High frequency oscillation, ventilation, Models, Neurons, Specific ventilation, Sleep, Temperature effects, Thermoregulation, Ventilatory responses

Bird: Ontogeny, altricial nestling (lovebird) 65:197; CO_2 or H^+ (duck) 68:189; Aerodynamic valving (goose) 70:287; Penguin 71:387

Mammal: K^+-depleted rat 57:23; "Drive," scaling (11 mammals) 58:245; Development (awake kitten) 58:253; Mouse size 60:83; Guinea pig normal respiratory variables 61:347; Effects nicotine, GABA, ventral medulla (cat) 64:351; Cost of breathing, cystic fibrosis 65:257; Reversal opioid-agonist effects (dog) 67:101; Varied visual, auditory stimuli (human) 68:345; ECF acid, acid-base infusion, thromboxane (cat) 71:169; Breathing pattern, O_2 uptake, untrained children 75:225; Cardiac output, HFV vs positive pressure ventilation (dog) 75:247; Immersion, temperature (human) 75:255

Mechanics: Regional pulmonary function, posture (human) 56:145,169; Positive end-expiratory pressure, lung fluid (sheep) 64:125; Inspiratory load, fatigue, inspiratory muscle EMG (goat) 73:311

Neurobiology: Acid-base changes, medulla ECF pH (cat) 53:379, Response to K^+, chemodenervated cat 60:217; Dopamine agonist (mouse) 61:335; Vagal cooling, lung C-fibers, stretch receptors (dog) 64:29; Carbonic anhydrase inhibition, chemodenervation (cat) 74:373

Poikilotherm: Hyperoxic toad 59:225; Primitive lung, dual-breathing *Amia calva* 59:213; Body temperature (lizard) 65:29

Water breather: Air breathing, tidal vs flow-through, intertidal rockpool teleost (*Blennius*) 71:355

Ventilation-perfusion ratio

Simultaneous $D_{L_{O_2}}$, $D_{L_{CO_2}}$ (dog) 52:53; HFV oscillations (dog) 54:31; Distribution, series, parallel dead space (dog) 54:121; High Pa_{O_2}, panting emu 54:189; Inhomogeneity (sheep) 55:205; Interregional, posture (hu-

man) 56:169; Inequality, IPC (duck) 57:317; Transient alveolar-arterial O_2, CO_2 differences, rebreathing (dog) 60:135; Unicameral lung (lizard) 60:277; Tidally ventilated, non-steadily perfused lung model 60:295; Intra-, extrapulmonary shunt (duck) 63:151; Lung blood flow, D_{O_2} (duck) 63:285; Acid-base disturbance (cat) 67:69; Hypoxic lung vasoconstriction (human) 68:11; Estimate $D_{L_{O_2}}$ 69:129, inequality (human) 73:279

Ventilatory requirement
Homeotherm: Cold exposure (duck) 57:103; Mouse size 60:83
Water breathers: Different P_{O_2} (lugworm) 57:349; Extracellular pH regulation (crayfish) 65:235

Ventilatory response to CO_2
Bird: Duck 68:189
Mammal: Noninteraction, central, peripheral CO_2 stimuli (cat) 51:379; Rebreathing, trained women swimmers 53:263; Slight hypercapnia (cat) 55:81; Brain stem hypocapnia (cat) 55:95; Sleep/wake (fetal lamb) 55:325; Athletic training 55:393; Low in burrowers (mice, rat) 57:341; Steady state, posture (human) 58:87; Chronic (dog) 58:377; Arterial pH servocontrolled ventilator simulation (dog) 58:345; Endogenous opioids (human) 61:85; Guinea pig normal respiratory variables 61:347; Acceleration (human) 62:141; Adequate arterial chemoreceptor stimulus (cat) 64:69; Central chemoreceptors, imidazole inactivation (rabbit) 64:161; Phenobarbital effect (cat) 64:307; Dopamine antagonist carotid body (goat) 65:169; Hyperoxia, anesthesia depth (cat) 65:181; Mild hypercapnia, almitrine (rat) 65:379; Weddell seal 67:197; Gravity, posture (human) 71:247; Adenosine (rat) 72:47; Sustained (cat) 72:361; And elimination of excess CO_2 (human) 73:379; CO_2 or dead space load, REM, SWS sleep (human) 75:183
Poikilotherm: Hyperthermic turtle 67:37; Anoxic, anoxic-hypercapnic turtle 71:213
Water breather: Circadian rhythm (crayfish) 69:359

Ventilatory response to H^+
Adequate stimulus arterial chemoreceptors (cat) 64:69

Ventilatory response to hyperoxia
Small-mammal newborn (mouse) 63:267; Anesthesia depth (cat) 65:181; Transient in heavy exercise (human) 68:203; Alveolar, V_T, f_R, tracheal tone (dog) 69:161; 5 yr after carotid body resection (cat) 69:209; Medulla ECF pH, glomectomized cat 70:37; Child 74:55

Ventilatory response to hypoxia, *see also* High altitude
Chemodenervation, peripheral: Newborn lamb 60:109; 5 yr later (cat) 69:209; Dopamine, norepinephrine (cat) 71:11
Mammal: Denitrogenation, water loading (human) 54:363; Menstruation 56:229; Brain stem, peripheral (cat) 57:171; Steady state, posture (human) 58:87; Scaling respiratory drive (11 mammals) 58:245; 5 min hypoxia (human) 60:227; Guinea pig 61:357; Phenobarbital (cat) 64:307; Dopamine antagonist carotid body (goat) 65:169; Tracheal tone (dog) 66:41; Cyanate-increased oxygen affinity (rat) 66:225; Weddell seal 67:197; Maturation Tb (kit) 68:359; Serotonin-depleted rat 69:227; Intact, awake newborn pig 71:307; Adenosine (rat) 72:47; Sustained (cat) 72:361; Biphasic, newborn kit 73:55; Mild hypoxia (child) 74:55; Sustained, Ca^{2+} channel, serotonin receptor block (human) 75:173
Poikilotherm: Temperature (toad) 69:267; Anoxic, anoxic-hypercapnic turtle 71:213
Water breather: Circadian rhythm (crayfish) 69:359

Ventilatory response to hypoxia-hypercapnia interaction
None, central, peripheral CO_2 stimuli (cat) 51:379; Brain stem, peripheral hypoxia (cat) 57:171; Carotid body selectively stimulated (goat) 70:63; Toad 70:377; Hyperoxia, hyperoxia plus hypercapnia, chemodenervation (lamb) 73:339

Ventilatory response to movement (neurogenic stimulus)
Incremental load exercise (human) 51:391; Rebreathing, trained women swimmers 53:263; Treadmill grade (goat) 54:331; Effect stride frequency (women) 62:117

Ventilatory stimuli
Phrenic neurogram, anesthesia vs decerebration (dog) 65:267

Vertebral artery
Blood flow, P_{O_2} change (cat) 63:65

Viscera
Receptors, splanchnic nerve (cat) 58:187

Visual stimuli
Breathing pattern, resting human 68:345

Vocal cords
Movement, hyperventilation (human) 58:289
Volume-pressure, *see* Pressure-volume

Water balance, *see also* Thermoregulation
Cold exposure (reindeer) 59:279
Water breathers' respiration
Fish: Respiratory responses, branchial vagus ganglion stimulation (carp) 51:241; Exercise (trout) 51:303, 68:85; Acid base status, kidney, gill ion exchange, hyperoxic trout 55:139,155,175; Muscle capillaries (icefish) 57:201; Gill arch movement, dorsal gill arch muscle function (carp) 60:39; Gill filament muscle function (carp) 60:59; Hypoxia-sensitive chemoreceptor, gill (tuna) 66:193; Gill vs skin O_2 uptake, hyperoxia, hypoxia (eel) 66:341; Gill filament, raker mechanoreceptors (carp) 69:173; Gill arch proprioceptors (carp) 69:183; Hyperoxia-induced hypercapnia, ventilation, acid-base status (elasmobranch) 71:227; Adaptation air breathing, intertidal rockpool teleost (*Blennius*) 71:355; Acute hypoxia, trout: H_2O ionic composition, metabolic acidosis, gill morphology 74:77, high O_2 affinity, transport, [RBC], intra-RBC pH, ion movements 74:91,99; Capillarity, slow, fast muscle (eel) 74:383
Fish, blood: Induced Root effect (eel) 51:275; Acid-base status, exercising tench 51:291; Acclimation temperature, O_2 transport (carp) 52:165; Acclimation temperature, RBC acid-base status, nucleotide phosphates (carp) 54:145; H^+, Cl^- equilibrium across carp RBC membrane 61:209; Arterial O_2 affinity, capacitance, hypoxic trout 61:221; Temperature, H_2CO_3 pK (trout) 61:237; RBC ionic equilibria (trout) 65:223; O_2 extraction, ventilatory requirement 70:221; Graded acute hypoxia (trout) 71:69; Intra-RBC adrenergic pH regulation (salmon) 74:65
Other animals: Ventilation, critical P_{O_2}'s (lugworm) 57:349; Ventilatory regulation, extracellular pH (crayfish) 65:235; Skin D_{O_2}, hypoxic cold submerged bullfrog 70:85;
Control of breathing: 51:241, 71:227
Water loading
And denitrogenation, high altitude (human) 54:363
Water loss
Ventilatory, environmental factors (human) 56:11; Variability, egg shell (hen) 59:339; Moth larva 60:121; Egg shell pore number (161 bird spp.) 61:1; Exercise, warm dry air (human) 67;115
Work of breathing
Posture, abdominal muscles (human) 53:341; Cystic fibrosis (human) 65:257

Zymosan
Reduced hypoxic pulmonary vasocontriction (dog) 53:295

CONTENTS

Introduction v
Members of the Editorial Board 1983–1989 vi
Guest Referees 1983–1989 vii
Units, Symbols and Abbreviations x
Author Index 1
Subject Index 45